Leadership development: the role of developmental readiness, personality dispositions,and individual values.

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PURE

LEADERSHIP DEVELOPMENT: THE ROLE OF DEVELOPMENTAL READINESS, PERSONALITY DISPOSITIONS, AND INDIVIDUAL VALUES.

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DEDICATION

To Mom and Dad,

This work would never have been possible

Were it not for your support and encouragement

Love you more than words can ever express...

To Nabil, Karim, & Carla,

The loves of my life...

To Mikey

You left too soon,

You broke our hearts,

BUT

You taught me a lesson I can never forget...

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READINESS, PERSONALITY DISPOSITIONS, AND INDIVIDUAL VALUES

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THESIS SUMMARY

Increased awareness of the crucial role of leadership as a competitive advantage for organisations (McCall, 1998; Petrick, Scherer, Brodzinski, Quinn, & Ainina, 1999) has led to billions spent on leadership development programmes and training (Avolio & Hannah, 2008). However, research reports confusing and contradictory evidence regarding return on investment and developmental outcomes, and a lot of variance has been observed across studies (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009). The purpose of this thesis is to understand the mechanisms underlying this variability in leadership development. Of the many factors at play in the process, such as programme design and delivery, organisational support, and perceptions of relevance (Mabey, 2002; Day, Harrison, & Halpin, 2009), individual differences and characteristics stand out. One way in which individuals differ is in their Developmental Readiness (DR), a concept recently introduced in the literature that may well explain this variance and which has been proposed to accelerate development (Avolio & Hannah, 2008, 2009). Building on previous work, DR is introduced and conceptualised somewhat differently. In this study, DR is construed of self-awareness, self-regulation, and self-motivation, proposed by Day (2000) to be the backbones of leadership development. DR is suggested to moderate the developmental process. Furthermore, personality dispositions and individual values are proposed to be precursors of DR. The empirical research conducted uses a pre-test post-test quasi-experimental design. Before conducting the study, though, both a measure of Developmental Readiness and a competency profiling measure are tested in two pilot studies. Results do not find evidence of a direct effect of leadership development programmes on development, but do support an interactive effect between DR and leadership development programmes. Personality dispositions Agreeableness, Conscientiousness, and Openness to Experience and value orientations Conservation, Open, and Closed Orientation are found to significantly predict DR. Finally, the theoretical and practical implications of findings are discussed.

Keywords: *Management and Executive Education, Self-Awareness, Self-Regulation, Self-Motivation, Competencies, Learning*

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GLOSSARY OF ABBREVIATIONS AND TERMS

DR – Developmental Readiness

- SA – Self-Awareness
- SR – Self-Regulation
- SM – Self-Motivation

Personality

- E – Extraversion
- A – Agreeableness
- C – Conscientiousness
- N – Neuroticism
- O – Openness to Experience
- FFT – Five Factor Theory of Personality
- FFM – Five Factor Model of Personality

Values

- CO – Conservation
- ST – Self-Transcendence
- OC – Openness to Change
- SE – Self-Enhancement
- COST – Closed Orientation
- OCSE – Open Orientation

Instruments

- BIDR – Balanced Inventory of Desirable Responding
- LCP – Leadership Competencies Portfolio
- Mini-IPIP – Mini-International Personality Item Pool; Personality measurement instrument
- MTQ – Motivational Traits Questionnaire
- Priv-SC – Private Self-Consciousness scale
- PVQ – Portrait Values Questionnaire; Values measurement instrument
- RSMS – Revised Self-Monitoring Scale
- SSRQ – Short Self-Regulation Questionnaire
- SVS – Schwartz Value Survey

Competencies & Development

- LC – Leadership competencies

- LCT1 – Competencies Time 1
- LCT2 – Competencies Time 2
- LD – Leadership Development

Control Variables

- EDU – Educational level; control variable
- LDCtrl – Intervention or Control Group; control variable
- StuEx – Student or Executive; control variable
- StuLD – Students in Experimental Group
- StuCtrl – Students in Control Group
- ExecLD – Executives in Experimental Group
- ExecCtrl – Executives in Control Group

Methods

- ANCOVA – Analysis of Covariance
- ANOVA – Analysis of Variance
- CFA – Confirmatory Factor Analysis
- CFI – Comparative fit Index
- DV – Dependent Variable
- EFA – Exploratory Factor Analysis
- GFI – Goodness of Fit Index
- IV – Independent Variable
- MANOVA – Multivariate Analysis of Variance
- RMSEA – Root Mean Square Error of Approximation
- SRMS – Standardised Root Mean Square
- TLI – Tucker-Lewis Index

CHAPTER 1 – INTRODUCTION

Countless examples of great leadership surround us. We all could recall significant people who have touched us or who have had a lasting impact on our lives by pushing us, motivating us to be our best, believing in us, and inspiring us. Leadership happens every day. Despite claims to the contrary, leadership remains a pivotal necessity at every level and in every place: in families, organisations, political parties, countries, and beyond... With or without formal or positional authority, leaders and leadership are there in every walk of life. What's more, good leaders can be bred and leadership can be developed.

1.1 Rationale and Thesis Background

Leaders exercise leadership. Leadership is about influence. It lies at the core of all human activities and interactions. It is the foundation for progress, and strong leadership is the cornerstone for success. According to Avolio (2004, p.95), "there is no greater force for achieving good or evil than leadership".

To put this in context, leadership has been argued to be the *single competitive advantage* that organisations can have in today's markets (McCall, 1998). Although intangible, leadership skills enhance and amplify reputational assets, thus positioning organisations for sustainable competitive advantage (Petrick et al., 1999). There is increasing awareness that the "softer" side of business is a new source of competitive advantage on which organisations can and must capitalise (Lawler, 2008).

Formerly, leadership was believed to be an innate, heritable aptitude that an individual either possesses or does not. Research has shown that this may not necessarily be the case, and that different environmental, social, educational, and

general life experience factors all interact to make leaders and to develop leadership potential in individuals. Research on twins, for example, concluded that heredity accounts for around 30%, of leadership potential whereas the remaining 70% is a direct result of experience (Arvey, Rotundo, Johnson, Zhang, & McGue, 2006; Arvey, Zhang, Krueger, & Avolio, 2007).

If leadership is not necessarily innate, then it follows that it can be acquired. It is a process that can be learnt. This learning must then be assisted. A great deal of learning takes place on the job and in daily life as a result of the challenges faced, and the interactions with peers, leaders, managers, and subordinates. Beyond that natural learning that takes place on a daily basis, other developmental triggers exist, especially in organisational contexts. One such trigger is formal leadership and management development.

Leadership development seems to be a major concern for organisations nowadays. Many developmental initiatives are being promoted and implemented, and millions are spent annually on leadership development (Boyatzis & Saatcioglu, 2008) despite recent economic crises and recession. Moreover, leadership development is not confined to the business sector alone. Calls for leadership development have been made in many different sectors, one example of which is healthcare management (e.g. Runy (2009), discusses how leadership development can be used strategically to gain competitive advantage in healthcare).

Many leadership development frameworks exist, and recent attempts have been made to provide one integrative framework (c.f. Day et al., 2009) within which to approach leadership development. In this thesis, leadership development is studied

from a competency perspective. Approaching it from this perspective is not to deny that other, maybe superior, approaches exist. This approach also recognises that leadership development will be at least as complex, if not more so than leadership itself, which is multifaceted, versatile, and trans-disciplinary in nature (Halpern, 2004). Thus no single leadership development approach would be expected to cover all aspects of leadership, adult learning, and developmental theories.

Numerous complaints have been "heard" in both the academic and practitioner arenas on the question of return on investment (thereafter ROI). These complaints are also exacerbated by the fact that results and conclusions from research dealing with the issue of ROI or developmental outcomes are often contradictory or inconclusive. Worse yet, a lot of variance is observed across studies attempting to evaluate the impact of leadership development interventions (Avolio et al., 2009).

However, few studies have attempted to investigate how and why this variance occurs. In fact, many factors are at play here, such as programme design and delivery, organisational support, perceptions of relevance, and others (Mabey, 2002; Day et al., 2009). Among those factors are individual differences, as individuals differ in many ways and at many different levels; for example, they differ in the capabilities and competencies they possess, in the way and the extent to which they are able and willing to learn, in the actual learning they acquire, and in whether or not they sustain that learning over time.

Now if leadership is such a highly complex process, then where can we find individuals that are able to master this complexity? If leadership is teachable and learnable, then how can we gain efficiency in developing its potential and the

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competencies it involves? What may increase the probability and likelihood of successful development? How can development best be stimulated and enhanced? How can development be optimised so as to provide adequate return on investment? And finally, how do people learn and sustain learning? Do some people learn better and faster than others? What is it that impacts learning? How can people who are more apt to learn be spotted and targeted? Is there some individual characteristic that may accelerate or decelerate learning and development?

These are important questions whose answers may well help practitioners make better choices regarding who to develop and who will likely provide more and faster return on investment from training and developmental initiatives. What is therefore needed is to understand the mechanisms through which leadership develops and find a way to explain or predict how well individuals can learn leadership.

A construct recently introduced in the leadership development literature is that of Developmental Readiness (Avolio & Hannah, 2008, 2009). Developmental Readiness (DR) reflects an individual's preparedness to benefit and learn from developmental experiences (Day et al., 2009). This construct has been proposed to accelerate the developmental process.

Developmental Readiness may well explain the variability in developmental outcomes. This thesis sets out to further explore the concept of developmental readiness. The present research suggests that the constituents of DR are self-awareness, self-motivation, and self-regulation, proposed by Day (2000) to be the backbone of leadership development. It is also suggested that DR will moderate the developmental process.

If developmental readiness is as important as it appears to be in the leadership development process, then it is also important to look at possible precursors to it. Personality dispositions and individual values are hypothesised to predict developmental readiness. Why personality and values? These are stable (or rather relatively stable in the case of values) individual traits and guiding principles that help explain many outcomes and life processes. I believe these two areas also have the potential to provide significant insight into leadership development and relevant outcomes. This gives rise to several questions: to what degree do certain types or patterns of personality fit together and make people more inclined to learn leadership? Do certain values lead to a proclivity towards learning leadership?

Consequently, this thesis sets out to answer several research questions:

- o What are the constituents of developmental readiness and how can they be measured?

- o What role does an individual's developmental readiness play in that individual's learning trajectory and developmental process? Does developmental readiness accelerate development as suggested by previous work?

- o What can help predict developmental readiness?

- o What role do personality dispositions play in determining developmental readiness? What personality dispositions are more (or less) relevant to developmental readiness?

o What role do individual values play in predicting developmental readiness? What value orientations may enhance an individual's developmental readiness?

These questions are addressed in this thesis, which presents a model whereby personality dispositions and individual values influence developmental readiness, which in turn moderates the developmental trajectory of individuals. The theoretical and conceptual propositions, as well as the empirical evidence provided, stand to inform theory in the leadership development field, while being relevant and significant for practitioners in this age where effective leadership is an urgent necessity and leadership development programmes abound.

In summary, the aim of this thesis is to further advance leadership development theories by looking at the mechanisms underlying the developmental process, specifically those individual characteristics that support this process of learning. The main concern is with the readiness, potentiality, propensity, and predisposition of individuals to learn and develop leadership, as well as to internalise and apply newly learnt knowledge, skills, abilities, and attitudes. More specifically, the objective is to further define, measure, and test the construct of developmental readiness, as well as to provide empirical evidence of its role in the developmental process. A further objective is to define and test its suggested precursors. Additionally, secondary objectives included the confirmation or disconfirmation of claims regarding developmental program effectiveness, exploring differences between novices and experts, and finally exploring the connections between personality, developmental readiness, and competencies.

1.2 Contribution of the Study

This study is expected to have significant theoretical and practical implications. First, this study addresses an existing gap in the literature linking personality dispositions, individual values, and leadership development. Second, the concept of developmental readiness has only been recently introduced and empirically investigated[1], and this study further contributes to its importance in the leadership development process. One could also posit that, beyond leadership, the notion of developmental readiness extends to other areas of learning and development. Third, developmental readiness helps explain the variability that has been found so far in studies assessing developmental outcomes and ROI. Fourth, developmental readiness will likely help tip the scale towards precursors to development, making questions of how to increase that readiness practically take precedence over what developmental programme to invest in and theoretically take precedence over specific attributes and characteristics of programmes. Fifth, if developmental readiness does moderate the developmental trajectory, then this has important implications for human resource managers and decision makers, with direct relevance to issues such as selection, promotion, assessment, and developmental decisions, among others. In short, this thesis offers a significant contribution both to theory and practice, the latter being very important at this time when researchers are being urged to highlight the relevance of academic theory to practice and move towards making research relevant and useful to practitioners (as evident, for example, in the Academy of Management's

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[1] In fact, studies dealing with Developmental Readiness such as Avolio and Hannah's work referenced above emerged after this study was conceptualised and designed, during the data collection stage.

recent efforts to highlight this area, as well as in research in the area of evidence-based management).

1.3 Thesis Structure

This thesis is organised as follows:

Chapter 2 sets the stage for the thesis, providing a brief literature review of leadership, learning, and developmental programmes. First, leadership theories and issues pertaining to leadership in current organisational contexts and environments are briefly discussed, emphasising their importance in organisational life. In the leadership and leadership development literature, special emphasis is placed on the importance of development of competencies in different domains and at different levels (c.f. Day, 2000; Katz & Miller, 1996; Hernez-Broome & Hughes, 2004). The second section of chapter 2 provides an overview and discussion of competencies, spanning the cognitive, social, emotional, and behavioural domains. Learning and adult learning approaches are discussed, followed by an overview of developmental programmes. Similarly, management and executive education and training approaches are presented, honing down to leadership development in particular. Developmental outcomes, effectiveness of programmes, and return on investment from developmental initiatives are briefly discussed. Finally, a discussion of novice versus expert learning and performance is presented, and implications with respect to students and executives are discussed and hypothesised.

Chapter 3 introduces Developmental Readiness. First, a discussion of self-awareness, self-regulation, and self-motivation is presented, these being suggested to be the key underlying dimensions of developmental readiness. These three meta-

competencies encompass the cognitive, social, emotional, and behavioural competency domains discussed in the previous chapter. Next, developmental readiness is discussed fully, drawing on existing conceptualisations of the construct. A definition and conceptualisation that encompasses previous definitions and adds a further dimension to them is then provided. After that, the role of developmental readiness in development is discussed and hypothesised to moderate the developmental process.

Chapter 4 explores the suggested precursors of Developmental Readiness. First, an overview of personality is presented and suggestions as to how personality relates to Developmental Readiness as well as hypotheses depicting their relationships are presented. A discussion of individual values follows, also focusing on how individual values can inform our understanding of Developmental Readiness. Next, the relationship of personality and developmental readiness to competencies is explored, and developmental readiness is hypothesised to mediate the relationship between personality and competencies. Finally, differences between students and executives are discussed.

Chapter 5 provides an overview of the methodology and study design underlying this thesis. Data collection procedures, instruments, and analysis methods are described. A discussion of the theoretical stance, paradigms, epistemology, and ontology taken in this research is presented. Next, study design issues, programme choice for the pre-post test design, and data collection methods and instruments used, as well as sample and data sources are discussed. Then the data analytical methods chosen are presented. Some particular issues faced in this research are discussed as

well. The chapter concludes with a brief discussion of ethical considerations involved in this study.

Chapter 6 outlines two pilot studies conducted. The first one assesses the structure, reliability, and validity of the Leadership Competencies Portfolio (M.W. Grojean, personal communication, May 2007) used to measure competencies pre and post intervention. The second evaluates the structure, reliability, and validity of the Self-Awareness, Self-Regulation, and Self-Motivation scales combined as a single measure of Developmental Readiness.

Chapters 7 and 8 present the results and findings of both the cross-sectional and pre-post quasi-experimental parts of the study. All the hypotheses, in addition to some un-hypothesised ad hoc relationships exploring individual DR factors, were analysed.

Finally, chapter 9 summarises, integrates, and discusses the main findings of this thesis. Implications for both theory and practice are highlighted, followed by a discussion of the present study's limitations, both methodological and theoretical. Finally, directions and avenues for future research conclude the chapter and thesis.

CHAPTER 2 - LEADERSHIP AND LEADERSHIP DEVELOPMENT

2.1 Chapter Overview

This chapter sets the scene for the whole thesis. It consists of a brief literature review of leadership, learning, and developmental programmes, including leadership development. First, leadership theories and issues pertaining to leadership in current organisational contexts and environments are briefly discussed, and their importance is highlighted. In the leadership and leadership development literature, special emphasis is given to the importance of the development of competencies in different domains and at different levels (c.f. Day, 2000; Katz & Miller, 1996; Hernez-Broome & Hughes, 2004). Thus the second section consists of an overview and discussion of competencies, which spans the cognitive, social, emotional, and behavioural domains under which all competencies seem to fall. Next, general learning and adult learning approaches (andragogy) are discussed, since development is all about learning, albeit in diverse forms. After that, an overview of developmental programmes, specifically management and executive education and training is presented, honing down to leadership development in particular. Leadership development is not to be equated with management and executive education. The latter, though, are increasingly being geared towards including a significant leadership development aspect in the design of their programmes. Both formal education and training programmes now inherently include leadership theory, practice, as well as developmental and experiential aspects. Developmental outcomes, effectiveness of programmes, and return on investment from developmental initiatives are briefly discussed. Finally, a discussion of novice versus expert learning and performance is presented, and implications with respect to students and executives are discussed and hypothesised.

2.2 Leadership

"As for the best leaders, the people do not notice their existence.

The next best, the people honour and praise.

The next, the people fear; the next, the people hate."

Lao Tse, 604-531 B. C.

Used and abused to a large extent, the notion of leadership has been subject to misunderstanding and misconceptions over the decades. From the heroic, all-knowing, autocratic "Great Man" (Carlyle, 1907) to the understanding, empathetic, authentic, and humble servant, leadership has been defined and conceived differently by different scholars and practitioners. According to Avolio (2004, p.95), there is "no greater force for achieving good or evil than leadership". This puts a huge responsibility on the shoulders of leaders or aspiring ones.

Leadership has been a much researched topic, and a focus of interest in all civilisations (although differently understood across cultures; Ayman 1993) as is evident from the wide body of literature on this topic. This surplus of leadership theories has been accused of being fragmented, contradictory, and trans-disciplinary (Tranfield, Denyer, & Smart, 2003; Chemers, 1993). Leadership is multifaceted in nature (Day, 2000). Definitions abound, which have given rise to lack of clarity and definitional confusion (Karmel, 1978). The problem seems to lie in the multitude of purposes driving research, as well as in the conceptualisation, operationalisation, and specification of leadership dimensions. It is difficult to settle on one single definition which captures all the different meanings and operationalisations of leadership. This is because leadership can be viewed from many different perspectives (including process, interaction, and behaviour) (Karmel 1978). The focus undergoes ongoing

shifts between leaders as persons and leadership as personal characteristics (especially in the practitioner literature), leadership as actions, styles, and behaviours, leadership as a process and social interaction (influence, complexity, context), and leadership as results-oriented (performance) (c.f. Day, 2000; Chemers, 2000).

Leadership is defined by Chemers (2000) as: "a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task" (p.27). In a review of the leadership literature, Chemers traced the evolution of the study of leadership. Prior to 1964, the study of leadership consisted mainly of traits and character, behaviours and styles, contingency interaction studies, status accrual and legitimacy (both behavioural and cognitive elements), prototype and perception studies (c.f. Carlyle, 1907; Hemphill, 1950; Hollander, 1964; Kahn, 1951; Stogdill, 1948). The mid 1960s to the mid 1970s saw contingency models of leadership effectiveness (Fiedler, 1964, 1967). Popular theories were normative decision theory (Vroom & Yetton, 1973) and path-goal theory (behavioural and motivational; House, 1971; House & Dessler, 1974; House & Mitchell, 1974), where the focus was mainly on the relationship of actions to outcomes, dependent on interpersonal (social) and task environments.

The mid 1970s to mid 1980s saw a focus on cognitive theories, focusing on perceptions of leadership. Attribution theory (Kelley, 1967), implicit personality theories (Hastorf, Schneider, & Polefka, 1970), recognition, inferential processes, and "the romance of leadership" (Meindl, 1990) all contributed to understanding leadership as a process of social influence, one of mutual dependency and reciprocal causality (c.f. Lord, 1985, Lord, Binning, Rush, & Thomas, 1978; Phillips & Lord,

1981). Gender differences and issues also became a focus of interest, with few differences but plenty of stereotype effects found (c.f. Schein, 1973, 1975).

The 1980s and 1990s were characterised by transformational theories: transactional versus transformational (or charismatic) leadership, linking personal characteristics, behaviours, and situational influences (c.f. Bass, 1985; Bass & Avolio, 1990), and studies of leadership efficacy (c.f. Chemers, Watson, & May, 2000), which was seen to provide the link needed between situation-specific (contingency) and universal (transformational) theories. Cultural approaches to leadership also emerged during that period (c.f. Hofstede, 1980, 1983; Markus & Kitayama, 1991). Relationship theories such as Leader-Member Exchange (c.f. Graen, 1976; Graen & Scandura, 1987) emerged during that period too.

Finally, the 1990s and onwards saw many new leadership theories and related concepts such as servant leadership (Greenleaf, 1991), authentic leadership (Luthans & Avolio, 2003), integration of emotions in the workplace, cognitive leadership (e.g. Lord & Emrich, 2000), complexity (Uhl-Bien & Marion, 2008), cross-cultural leadership (e.g. House et al., 2004), shared leadership (e.g. Day, Gronn, & Salas, 2004), spiritual leadership (Fry, 2003), and e-leadership (Avolio, Kahai, & Dodge, 2001), as well as extensions to existing theories such as leader-member exchange or LMX (see Avolio, Walumbwa, & Weber, 2009 for a lengthy review of all these theories and their origins). Interested readers are also encouraged to consult leadership textbooks such as Bass and Bass's (2008) *Handbook of Leadership* or other similar texts for more comprehensive reviews of leadership theories.

Leadership research provides evidence supporting both subjective and objective perspectives, and verifies both specific situationally contingent and broadly generic causal forces at work (Chemers, 1993). Leadership is a highly complex social and organisational interaction and networking process which is not isolated and takes place within other processes in society and the workplace (Hofstede 1993). Thus it should be studied within its conceptual and practical contexts. Leadership involves the ability to perform multiple roles and behaviours that circumscribe the requisite variety implied by organisational or environmental contexts (Denison, Hooijberg, & Quinn 1995). Therefore the social nature of interpersonal and relational competencies should also be taken into account when studying leadership (Day 2000).

Definitions of leadership have evolved from positional authority to influence processes to shared social systems that take into account individual, team, and organisational interdependencies (Day & Harrison, 2007). This evolution is necessary given the multidimensionality and complexity of the nature of leadership. Focusing only on the leaders themselves is limiting in that it disregards contextual influences, interpersonal relationships involved, and even the different levels of leader identity and self-conceptualisation.

Leadership is about making decisions, assembling resources, listening, gathering information, articulating goals and visions, identifying strategies, enlisting followers' help, and delegating tasks, among other things. Its scope differs from most other activities a person has to deal with and has broad implications. There often is an organisational context within which leadership is exercised, characterising each particular situation with different levels of authority, power, and other factors. Different sets of qualities are needed for these different organisational contexts

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(Keohane, 2005). According to Mastrangelo, Eddy, & Lorenzet (2004), both professional (the formal or technical) and personal (the human or humane) leadership behaviours are needed.

Leadership is also a balancing act (Mitki, Shani, & Stjernberg, 2008) where leaders need to balance differing values (both personal and organisational), manage conflict and tension, orchestrate change, guide individual and group behaviour, manage often difficult relationships, provide structure, and motivate followers or teams around a shared sense of responsibility and mission. Leadership combines distribution with direction, delegation, decision-making, and communication (Collinson & Collinson, 2007). As organisations struggle to stay on top of and adapt to the tremendous pressures they face, both from their internal and external environments, leaders have to face unprecedented and complex challenges (Hannah, Avolio, Luthans, & Harms 2008). Given these increasing challenges and expectations, this makes it increasingly difficult for people in leadership roles or positions to act consistently and appropriately. Leaders may feel constrained because of their accountability to multiple stakeholders, but that is inherent in the very nature of leadership. Moreover, employee energy, enthusiasm, and loyalty are also being challenged because of this change. Leaders need to step up and embrace the challenges they face in order to positively influence their followers, organisations, and environments (Collinson & Collinson, 2007; Hannah et al., 2008). Leaders who constantly adapt to this ambivalent and constantly changing environment are the ones who will prosper and succeed (Keohane, 2005).

In these complex times, leaders need to be genuine in helping their followers restore confidence, resiliency, search for meaning and purpose, foster higher self-

awareness, and bounce back from traumatic events – this is at the heart of authentic leadership (Luthans & Avolio, 2003; Avolio & Gardner, 2005; Gardner, Avolio, Luthans, May, & Walumba, 2005). Good leaders lead people through tough transitions, making sense of ambiguities, and turn paradoxes into meaningful learning lessons (Fairholm, 2004). They strive to possess good judgment, the ability to foresee consequences and recognise pitfalls, the ability to gather and use the right information in their decisions, to articulate persuasively, to communicate effectively, and to listen carefully. They also behave with integrity and courage, and cultivate a good amount of self-knowledge, tolerance, passion, and perspective. Good leaders have effective moral compasses, as well as clear values and ethical standards (Keohane, 2005). They are flexible, supportive, conscientious, authentic, devoted, with a high degree of relationship orientation (Marques, 2008). All the above is crucial for the omnivorous art of leadership.

One approach that enhances leadership research and practice is complexity theory (Marion & Uhl-Bien, 2001; Uhl-Bien & Marion, 2008), which represents a paradigm shift in the study of leadership. Rather than reducing leadership only to interpersonal interactions, complexity theory sees leadership as being or providing links between complex emergent structures within and among organisations, at both the micro and macro-levels. It represents a more holistic view of the processes and interactions of leadership. The focus is on creating and influencing environments conducive to desired outcomes rather than controlling or predicting the future. Complexity theory may augment rather than replace existing theory and approaches (Marion & Uhl-Bien, 2001). Such an approach has many implications for leadership. It changes the focus from management and control to the environment within which

leadership takes place, to the influence process, to other success criteria than just individual attributes. Leadership involves being a catalyst, facilitator, or moderator. Thus creativity and interactive dynamics are set in motion. This kind of complex leadership is needed at higher levels of organisations (Marion & Uhl-Bien, 2001).

Hooijberg, Hunt, and Dodge (1997) suggested the Leaderplex Model (Figure 1), integrating behavioural, cognitive, and social complexity, suggesting interrelationships and linking them to leadership and organisational effectiveness. The aim of this model was to integrate the wide range of situations, contexts, roles, and behaviours in the study of leadership effectiveness. Grojean and Yeow (2005) proposed a further development to the Leaderplex model. Cognitive, social, and behavioural complexity form a person's leadership potential (Leadership Role Identity). They developed their model within a leadership development framework. These models provided a good framework on which to base this research in that they address the different complexity and competency areas required for leadership. Leadership is often viewed or described, among other things, as a set of skills (not traits) to be mastered over time. Competence and competencies are believed by some to be the backbone of leadership effectiveness (Riggio, 2008; Day et al., 2009). Furthermore, the focus of many leadership development programmes is still typically on capabilities and competencies, the two terms often being used interchangeably although differentiated by some researchers. Competency-based leadership and management development have been a major organisational focus since the 1990s (Finch-Lees, Mabey, & Liefooghe 2005). This research takes a competency approach to leadership and leadership development. A discussion of competencies will follow shortly.

Figure 1 – The Leaderplex Model

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In summary, the study and definitions of leadership have evolved from trait-based approaches focusing on personal characteristics, behaviours, and styles to social-relational approaches, attributions, and perceptions that go beyond individual attributes to encompass the situational, environmental, and contextual. Leadership remains a complex process that requires a holistic definition and approach. Leadership is an influence process that happens within a social context, with followers, teams, peers, and superiors (Chemers, 1993). It includes a set of skills, competencies, and capabilities (Day et al., 2009), and is a process of interpersonal and intrapersonal capabilities used within a social environment (organisational or otherwise). It is broad and complex and cannot be defined myopically, and has broad and complex social and organisational implications.

Finally, good leadership provides competitive advantage (Mensch & Dingman, 2010). In fact, leadership has been argued to be the *single competitive*

advantage that organisations can have in today's markets (McCall, 1998). Petrick et al. (1999) posited that although intangible, leadership skills enhance and amplify reputational assets, thus positioning organisations for sustainable competitive advantage.

2.3 Competencies

A competency is an "underlying characteristic of the person that leads to or causes effective or superior performance" (Boyatzis, 1982). Competencies are capabilities or abilities, behaviours organised around an underlying construct or intent (Boyatzis, 2008), and potential capacity or capability to perform effectively, to handle certain situations and complete certain tasks (Bucker & Poutsma, 2010), resulting in superior performance (Young & Dulewicz, 2008).

Research in the area of leadership does not do justice to the complexity of modern work environments (Hooijberg, 1996). Recently, though, the notion of contradiction, paradox, and complexity has been receiving more attention in leadership (Hart & Quinn, 1993; Denison et al., 1995). Multiple roles have to be played by leaders including vision-setting, motivating, analysing (network and boundary spanning), and being a task master. Their roles seem to be complex, multidimensional, contradictory, and paradoxical (though arguably no more complex than other roles and relationships individuals deal with in the course of a lifetime). Leaders have to manage a network of relationships from superiors to peers to subordinates. As the size of this network grows, so do the demands, thus leading to increased paradox and contradiction (Hooijberg 1996). The need to balance all the above conflicting demands, simultaneously mastering these seemingly contradictory or paradoxical capabilities or competencies is ever increasing (Hart & Quinn 1993).

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Leaders need to have the cognitive and behavioural capacity to respond to this complexity (Denison et al., 1995). The ability of an individual to match his/her social, cognitive, behavioural, emotional, and cultural repertoire to the demands of the situation becomes his/her distinctive competency. The broader the repertoire, the more appropriate the response; the more complex the job, the greater the need for a wider repertoire; the more differentiation applied, the more effective the individual (Hooijberg, 1996).

Additionally, the competing values framework (CVF – Quinn, 1988) suggests that managers and leaders have to constantly operate on a continuum between emphasis on control versus flexibility and spontaneity, and between internal organisational focus and external environmental focus. The CVF provides a means to accommodate and make sense out of seeming chaos and paradox and provides a useful mental framework for managing managerial dilemmas (Sendelbach, 1993; Thompson 1993). Thus managers and leaders can be trained to understand and work within these organisational continuums, and to develop the competencies needed for such a complex environment.

The role of competencies and capabilities in leadership and leadership development has been highlighted in the literature (Day, 2000; Katz & Miller, 1996; Hernez-Broome & Hughes, 2004; Burgoyne et al., 2004). These may be personal, job or role specific, and/or universal. All competency areas need to be addressed for the holistic development of individuals who face leadership challenges continuously.

Effective leadership and management competencies are now seen as key to successful organisational performance and competitiveness (Gray & Mabey, 2005).

Different competencies are highlighted in leadership, as evident in 360-degree feedback surveys, for example. These include personal, other-oriented, and organisationally-oriented capabilities. Some of these are adaptability, ambition, trustworthiness, integrity, perseverance, ability to coach and develop others, conflict management capabilities, communication skills, relationship management, goal-setting, planning, setting expectations, use of influence tactics, problem analysis and decision making, result achievement, teamwork promotion, and inclusiveness. Other competencies include the ability to motivate, reward, delegate, and get others to participate, the ability to keep others informed, staffing, innovation, political savvy, business know-how, commercial management, basic leadership skills, strategic leadership, stress tolerance, and time management. (c.f. McCauley, 2006; McCall & Hollenbeck, 2002; Lombardo & Eichinger, 2001).

Van Velsor and McCauley (2004) identified three broad competency areas: *self-management capabilities*, such as self-awareness, ability to balance conflicting demands, ability to learn, and leadership values; *social capabilities*, such as ability to build and maintain relationships, ability to build effective work groups, communication skills, and ability to develop others; and *work facilitation capabilities* such as management skills, ability to think and act strategically and creatively, and ability to initiate and implement change. Young and Dulewicz (2008) highlight conceptualisation, alignment, interaction, and creation of success as important competency clusters to be targeted. Authenticity, agility, resilience, foresight, self-mastery, G-localism (ability to work in both local and global environments), intuition, presence, and creativity (O'Brien & Robertson, 2009), emotional intelligence-related competencies (Jamali, Sidani, & Abu-Zaki, 2008), strategic perspective, analysis and

judgment, planning and organising, managing staff, persuasiveness, interpersonal sensitivity, oral communication, resilience and adaptability, energy and initiative, achievement motivation, and business sense (Dulewicz & Herbert, 1999), technical ability and people skills (Dreyfus, 2008), and self-efficacy (Amit, Popper, Gal, Mamane-Levy, & Lisak, 2009) have all been highlighted as integral to leadership.

Competencies seem to fall under four broad areas: the cognitive, the social, the emotional, and the behavioural, and some have even considered the cultural as an independent dimension (Boyatzis, 2008; Boyatzis & Saatcioglu, 2008; Bucker & Poutsma, 2010; Denison et al., 1995; Hooijberg, 1996; Leonard, 2008; Day et al., 2009), especially relevant in multinational, multilingual, and global settings. The cultural domain could be argued to fall within the social category and is treated as such for the purpose of this research, but may warrant separate categorisation. A closer look at cognitive, social, emotional, and behavioural competencies follows. Complexity at these levels has become a developmental imperative (Day & Lance, 2004).

2.3.1 Cognitive Competency

Leadership factors have been argued to reside in the mind (Lord & Emrich, 2000). They are dependent on the mental models that leaders hold about themselves, others, their organisations, and their broader environments (Day et al., 2009). This is why the study of cognitive processes involved in leadership is important in shedding light on the whole developmental process.

Cognitive competency and complexity refers to the degree of integration, differentiation, and discrimination that an individual is able to apply within his/her

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cognitive space (Streufert & Swezey, 1986). It is concerned with how meaning is derived from and sense is made out of the tremendous amount of information faced by leaders and managers today.

Discussions of cognitive processes usually centre on individual/dyadic and collective cognition. Individual/dyadic cognition includes meta-cognitive processes and leadership, implicit leadership theories (ILTs, c.f. Epitropaki & Martin, 2005), and network-based models of ILTs, while collective cognition includes charisma, organisational performance and sense-making, and transformation and change (Lord & Emrich, 2000). Collective cognition is socially constructed from social exchanges and interactions. According to Walsh (1995), cognition and social processes commingle.

According to Wofford (1994), both situational and individual characteristics affect cognitive processes used to handle problems. The type of cognitive process a person uses depends on their knowledge structure in memory and situational demands, while the number and complexity of scripts (conceptual structures) and their accessibility are affected by individual characteristics. The more cognitively complex an individual, the more scripts tried out and stored in memory, the more information gathered, the more perspectives applied in perceiving and evaluating stimuli, and the more functional constructs in memory. These scripts adapt to feedback and change when discrepancies are observed (the notion of unfrozen schemas). Scripts most available in memory are the ones most likely to be used in handling job problems. Script development and script track access are affected by the cognitive competency of an individual.

A meta-cognitive approach to information processing and leadership reveals a complex process by which leadership activities are guided by self-knowledge and social situations. Faced with a bewildering amount of complex and ambiguous information, people use knowledge structures to organise, interpret, represent, process, and act on this information. Schema components are learned first; leadership schemas are first shaped by external processes and the context in which they occur; later knowledge is created and cued by social processes. Links become progressively stronger as experience and knowledge increase. Seeing discrepancies enhances learning and understanding. Cognitive structures and memories are recreated and refined within context as new information is assimilated (Lord & Emrich, 2000; Walsh, 1995).

Kellett, Humphrey, & Sleeth (2002) suggest that greater cognitive competency predicts leadership. Moreover, in complex job settings the relationship of cognitive complexity with effectiveness and advancement seems to be stronger than in simple job settings (Wofford 1994). The more sensitive the individual to salient information in the environment (those enacted by the individual's perception), the more boundary spanning activity performed. Individuals who discriminate among a wide variety of stimuli possess more potential for information processing, leading to better performance, and more finely tuned strategic plans (Dollinger 1984).

Cognitions play a key role in strategic decision processes. They act as antidotes to functional fixedness, and enhance flexible thinking (Walsh, 1995). For example, key to effective leadership are sense-making, sense-giving, information processing, perceptions, awareness, pattern recognition, and perspective-taking. These all contribute to an individual's cognitive competency.

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Integrative complexity (the way a person combines information for adaptive and creative purposes) also reflects cognitive competency. Low integrative complexity (more simple cognitive structure) entails fixed classification rules and stereotypical responses to information. As integrative complexity increases, more complex functions are integrated in information handling. High integrative complexity entails integrating multiple and simultaneous alternative perspectives, abstract thinking, and minimal rules for dealing with new information. People differ in their capacities and in their motivation to seek more environmental complexity. Different individuals may have high integrative complexity in dealing with certain information domains and low integrative complexity in other content areas (McGaffey & Christy, 1975). Greater integrative complexity in more areas implies greater cognitive ability.

Diverse career history, tenure, years of experience, position, success history, gender, experience of paradoxical (and complex) situations, national culture, and scope of work all affect managers' interpretive processes, cognitive skills, vertical and horizontal complexity, etc. Work (and life) experience change the qualitative nature of a person's category system (Walsh 1995).

Differentiation (number of dimensions) and integration (degree of interconnectedness) of an individual's cognitive map (scripts, schemas, interconnected knowledge, etc…) are related to cognitive complexity. The utility of cognitive maps lies in their capacity to invoke action. (Walsh 1995). Individuals must simultaneously focus on opposing aspects, the more effective ones being those who have the cognitive and behavioural complexity to respond appropriately to a wide range of situations that may require opposing behaviours (Denison et al., 1995).

In summary, cognitive competency is the ability to integrate, differentiate, and make sense of the vast amount of information faced. It seems to be a necessary condition for effective leadership. In complex environments, complex frameworks of understanding are needed for effective behaviour. Finally, it is at the cognitive/information processing level that learning of new leadership behaviour takes place first, even if temporarily, but still a foundation for change which may or may not be stabilised depending on other situational and contextual factors (Szabo et al., 2001).

2.3.2 Social Competency

Leadership resides in the social context of interactions (Lord & Emrich, 2000). Leadership is most often described as an influence process, where a balance of power and influence are used between leaders and followers to reach desired outcomes. Hooijberg (1996) suggests thinking of leadership as a dimension, extending from very little incremental (social) influence to substantial influence. Moreover, the interplay between power and influence lies at the essence of leadership processes and perceptions.

The influence process is not unidirectional; it may take many different forms, and influence in one direction may enhance influence in other directions. There are three different types of influence processes: instrumental compliance, internalisation, and identification (Yukl, 1998) – some of these may occur simultaneously. These influence attempts have three main outcomes in followers: commitment, compliance, and resistance. Yukl and Tracey (1992) discussed several influence tactics (rational persuasion, inspirational appeal, consultation, ingratiation, exchange, personal appeal, coalition, legitimating, and pressure) commonly used on superiors, peers, and

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subordinates. They found directional differences in how often various influence tactics are used. They also found a direct relationship between tactics used and outcomes such as task commitment and effectiveness ratings – thus the importance of the ability to apply appropriate tactics in different situations.

Leadership uses influence and social control, as well as authority and power. It is worth distinguishing here between power and authority. These tend to be intertwined and sometimes merge imperceptibly. But they should not be viewed or defined as variants of each other. They are rather extremes on a continuum of control (Grimes, 1978). Power is the interplay between influence (reducing authority) and social control (reinforcing authority). Authority is where goals are collective and established by consensus or majority, whereas power is where goals are more differential and established by a few at the top, and reached by compliance rather than consensus. Influence is exercised through persuasion (high trust), inducements (neutral trust), or constraints (low trust), whereas social control seeks to counter these influences respectively through persuasion, sanctions, or insulation, also reflecting the respective levels of trust. Trust is related to both influence and social control. Congruent influence/control tactics reinforce the existing trust levels, whereas incongruent ones either increase or decrease trust levels depending on the experience (whether positive or negative) (Grimes, 1978).

Power plays an important role in leadership processes, but different types need to be applied and mixed carefully – this is complicated by the interrelationships between them, and depends on the type of situation, organisation, task, and social norms (Yukl, 1998). French and Raven (1960) suggested some bases of social power – namely reward, coercive, legitimate, referent, and expert power. These different

types of power are interrelated in complex ways. Effective individuals tend to use a mix of these powers, though relying more on personal rather than position power (Yukl, 1998). Power is not static – it is acquired and lost. The stronger the basis of power, the greater the power, and its range varies greatly for different types of power. Attempting to use power outside of range reduces power (French & Raven, 1960).

Now leadership success depends on the way and context in which power and authority are exercised, and their appropriateness to the situation (in a subtle, careful manner, minimising differentials rather than in an arrogant, manipulative, and domineering way). Effectiveness of influence tactics depends on the skill and potential to influence attitudes, as well as the power base and the amount of resistance faced. Each tactic is useful in a different context, and some tactics (or combinations thereof) are more effective than others, depending on compatibility (Yukl, 1998). As cognitive and social awareness increase, so does the ability to differentiate and decide on which type of power and influence to use and which is more appropriate, depending on the context and situation and on personal characteristics and readiness of teams, followers, and all parties involved.

Thus social competency is the ability to use influence, control, authority, and power appropriately within one's social relationships and interactions, based on an understanding of relational and contextual dynamics. Social competency has been linked to managerial (and leadership) wisdom (Boal & Hooijberg, 2000). Application of social skills requires a deep understanding of the social setting in which they occur. Hooijberg, Hunt, and Dodge (1997) call this social complexity, the "…capacity to differentiate the personal and relational aspects of a social situation and integrate them in a manner that results in increased understanding or changed action-intention

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valences" (p. 382). Additionally, to understand any social context and processes involved, a deep understanding of the cultural values that underlie and may have shaped this particular setting is also needed. This calls for greater cultural awareness and knowledge of how to deal with the diversity of cultural and value backgrounds found in any workplace today. Finally, increased social competency is also directly related to behavioural and emotional competencies. When a person can accurately assess the social situation s/he is acting in, s/he is able to make more appropriate behavioural decisions, guided by emotional ability.

2.3.3 Emotional Competency

It is important for leaders and organisations to understand the emotions and emotionality involved in the process of leadership, which is undoubtedly an emotional process, including but not restricted to self-awareness, self-motivation, reflection, and empathy (James & Arroba, 2005). Emotion is a complex phenomenon, which consists of a biological, psychological, and social component; of physiological arousal, emotional experience, and emotional expression (Kang & Shaver, 2004; Lane & Schwartz 1987). Emotion is preceded by a cognitive appraisal of the environment, leading to its activation. It becomes more differentiated as a person interacts with significant others. Lane and Schwartz (1987) assumed that emotional experience develops in a similar way to cognitive development. They argued that individual differences in emotional awareness reflect variation in cognitive complexity.

Emotion and cognition go hand in hand, and emotion/affective information can improve cognition. Extracting, regenerating, and refining schema occur within an affective framework (Lord & Emrich, 2000). Where cognitive skills mainly involve thought-processing, emotional skills involve integrating emotion with thoughts.

Openness to and regulation of emotion allows individuals to perform better in problem solving situations. Emotional information through empathy improves the ability to understand and manage emotions, thus improving the cognitive skills of pattern recognition and perspective taking (Wolff, Pescosolido, & Urch Druskat, 2002). This improves coordination and supporting/developing others, which requires the cognitive skill of recognising/labelling behavioural patterns.

By anticipating others' and one's own needs and reactions, one can find better courses of action that satisfy all these needs. To depict an emotion is a way of coming to know it and also a mechanism for developing a cognitive structure of it. Advanced cognitive organisation can be associated with a greater degree of emotional organisation, and cognitive complexity corresponds to emotional experience (Lane & Schwartz, 1987). Emotional awareness serves as a guide for on-the-job performance, interrelations, social interactions, motivation, and other emotional skills (empathy, gauging others' feelings, etc…) (Avolio, Gardner, Walumbwa, Luthans, & May, 2004).

Emotions play a central role in individual experience and interpersonal relations, while emotion knowledge plays an important part in social interactions. This involves interpreting one's own and others' emotional reactions, predicting reactions from antecedent events, controlling emotional expressions, influencing others' emotions, and talking about emotional reactions (Shaver, Schwartz, Kirson, & O'Connor, 1987). There is also growing evidence of the importance of empathy in leadership; people respond better if they feel understood and valued (Kellett, Humphrey, & Sleeth, 2002). People who understand emotions seem to be able to motivate followers more effectively and efficiently. (Avolio et al., 2004). One role of

leadership is helping people resolve and make sense of ambiguous events. This is done by first empathising, understanding, and identifying with the collective emotional state, then crafting a response and communicating it – thus setting an emotional tone and thereby influencing behaviour (Pescosolido, 2002).

Central to every emotion is the experience of interpreting the world in a certain way, and thus differences in emotional responsiveness may be attributed to differences in evaluative tendencies and the way in which events are interpreted, across individuals and cultures (Sommers & Scioli, 1986). Emotionality seems to be more strongly linked to an emphasis on cognitive and value pursuits than on momentary excitement and impulsiveness. Thus to understand emotionality we need to examine how individuals evaluate specific situations and attach a certain significance to them. A person's life orientation and value commitments as well as evaluative schemes may have important consequences for his/her emotionality (Sommers & Scioli, 1986). Values and beliefs serve as lenses through which appraisals are shaped and emotions experienced. Thus certain evaluative schemes may trigger certain emotions, and a strong value commitment may lead to an orientation associated with a greater emotionality. When evaluating schemes based on certain values held, a special meaning is conferred upon the situation which increases the likelihood of responding with emotion. Furthermore, the capacity to experience positive other-related emotions (appreciation, gratitude, goodwill, concern…) strengthens the consistency between values and actions (Michie & Gooty, 2005). This is why a better understanding of values and orientations may well be key to better understanding and prediction of emotional reactions and their outcomes.

Emotional intelligence has been depicted as having self-awareness, a capability for management of one's emotions and recognition of others' emotions (empathy), the creation of self-motivation, and a skill in dealing with relationships (Salovay & Mayer, 1990). Emotional complexity, on the other hand, is defined as having emotional experiences that are broad in range and well differentiated. According to Kang and Shaver (2004), it is a product of cognitive complexity, personality dispositions, and life experiences and leads to emphatic understanding of others' feelings and greater interpersonal adaptability. Coordinating emotional expressions to the complex and changing demands of the social context implies a considerable degree of differentiation and complexity in expressive behaviour.

In summary, emotional competency encompasses both emotional intelligence and complexity. Greater emotional competency is associated with greater adaptation to the environment (Barrett, Lane, Sechrest, & Schwartz, 2000). Emotional awareness, regulation, and differentiation all enhance leadership effectiveness. Emotional self-awareness and emotional self-control have been identified among the competencies that differentiate outstanding from average leaders (Boyatzis, 2008; Goleman, 1998; Goleman, Boyatzis, & McKee, 2002).

2.3.4 Behavioural Competency

Leadership resides in the situation – therefore different leadership behaviours are called for in different situations. Moreover, leadership factors reside in behaviours and attitudes (Lord & Emrich, 2000). Behaviour depends on the cognitive interpretation of a given situation, such as pattern recognition and perspective taking.

Situational leadership theory postulates that the situation in which leadership is embedded makes a big difference. Different behaviours work at different times ("different strokes for different folks [or] for the same folks at different points in time" (Pierce & Newstrom, 2006, p.190)).

In the path-goal theory of leadership (House, 1971, House & Dessler, 1974), four kinds of leadership behaviour are suggested: directive, supportive, participative, and achievement-oriented. Different leadership styles may be exhibited in different situations. Its main propositions, briefly, are that behaviour is acceptable if seen as instrumental to satisfaction, and that behaviour is motivational if it makes satisfaction contingent on performance and provides the necessary support for effective performance. The acceptability of behaviour is determined in part by subordinate characteristics, and the effect on subordinate motivation depends on the environment's motivational stimuli, constraints, and rewards (House & Mitchell, 1974). Other behavioural theories looked at different styles such as autocratic, democratic, laissez-faire or delegative leadership (Lewin, Lippitt, & White, 1939; Tannenbaum and Schmidt, 1973).

Behavioural competency is analogous to cognitive competency. It incorporates the idea of a behavioural repertoire and the idea of paradox and contradiction. Behavioural competency refers to a portfolio of leadership functions allowing the individual to respond to complex demands of the environment. It includes two dimensions, that of behavioural repertoire (portfolio of functions that can be performed) and behavioural differentiation (the extent to which performance is varied according to demands of the situation) (Hooijberg, 1996). It is also suggested to be the sufficient condition for effective leadership (Denison et al., 1995).

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Individuals who perform multiple leadership functions and tailor them to organisational demands will be more effective than those who perform only one function without variation. The more functions that can be performed in different contexts and with different people, the more effective the leadership. The broader the repertoire, the more appropriate the response; the more complex the role and job, the greater the need for a wide repertoire (Hooijberg, 1996)

Behavioural differentiation is the ability to perform functions in one's repertoire differently, adaptively, and flexibly depending on the specificity of the situation. The need for differentiation is based on the characteristics, task, culture, etc… of the people involved. The more differentiation applied in choosing different functions, the more effectiveness achieved. But this is not always perceived positively by subordinates due to perceived inconsistency (Hooijberg, 1996). Thus a lot of sensitivity and tact are needed in such situations.

Thus effective people are those who have the cognitive and behavioural skills that allow them to respond appropriately to a wide range of leadership situations that may require opposing behaviours – they draw from an extensive behavioural repertoire in their jobs (Denison et al., 1995). Quinn (1984, 1988) addressed this issue of contradiction in a model he developed, with leadership roles arranged on a circumplex, based on two bipolar dimensions: flexibility vs. stability and internal vs. external focus. These extremes should be reconciled.

In summary, behavioural competency is the ability to use different behaviours from a wide repertoire and to differentiate and tailor them according to the complexity of the situation, context, or relationships involved. Highly effective managers seem to

have greater behavioural competency, with more balanced, sophisticated, and complex repertoires, incorporating a host of contradictions, conflicts, inconsistencies, and paradoxes (Denison et al., 1995; Hart & Quinn, 1993). Hart & Quinn (1993) suggested that high behavioural competency might be a somewhat universal capability for high-level leadership. Probably one of the areas with the greatest need for more requisite variety and behavioural differentiation and ability is cross-cultural leadership where national, linguistic, and cultural boundaries are crossed (Denison et al., 1995).

The reader may be lost at this point as to how all the above relates to the research questions put forward. The above sections on the different competency domains serve as a basis for the study conducted, which relied mainly on competency development within leadership and managerial development programmes. These competency domains will be integrated in the discussion on Developmental Readiness in Chapter 3.

2.4 Learning

Since education, training, and development is all about learning, it is worth looking at the learning process before focusing on specific management and leadership development. Learning, and thus teaching, is about transformation and change (Lengnick-Hall & Sanders, 1997). Learning is a cognitive and social experience (Gherardi, Nicolini, & Odella, 1998), as well as an emotional one (Fineman, 1997; Brown, 2000). People can grow, learn, change, and sustain change in the course of their careers and life spans. This is supported by research in the field of adult learning and development, or andragogy. Research has shown that individuals'

ability to learn depends on a combination of motivational and personality factors, and different learning techniques (Van Velsor & McCauley, 2004).

Developmental and learning theories have been largely based on early works of theorists such as Piaget (1954), Kegan (1982), Torbert (1987), Kohlberg (1969), and others. People learn in different ways and at different levels. According to Haskins and Clawson (2006), people learn through visible behaviour, conscious thought, and sub-conscious core values, beliefs, assumptions, and expectations. Learning depends on whether the individual is an action-oriented learner or not, whether s/he is accountable for the application of learning, and on the ongoing review of material/concepts learnt (Longenecker, Simonetti, & LaHote, 1998).

Learning was typically viewed as mere knowledge transfer or delivery from the "all-knowing" professor or trainer to the student or trainee. The dominating view was that of information delivery, acquisition of data, facts, and practical wisdom, i.e. delivery of food for the mind (Gherardi et al., 1998). This view of learning has evolved in the last couple of decades or so, lending way to a more collaborative and active approach. Learning is now seen as a goal-directed process (Boekaerts, 1996). According to the behavioural approach, learning is a process of organising and responding to experience in order to maximise desired behavioural outcomes; behavioural changes thus serve as indicators of learning. Furthermore, the "teacher" is viewed as a "guide on the side" of the student, playing a facilitative role rather than being merely a transmitter of knowledge, and the learner an active participant in constructing knowledge rather than an empty vessel to be filled (Foster, Angus, & Rahinel, 2008). Thus learning requires a high level of commitment on the learner's part. Lombardo and Eichinger (2000) suggested that those with the highest potential

will be those that are more interested in challenges, are eager to learn, and are results-oriented even in the toughest conditions; i.e. they have high learning agility. Learning agility includes people (social) agility, results agility, mental agility, and change agility. Those with the highest learning agility will be those with the most potential to lead (Lombardo & Eichinger, 2000; Eichinger & Lombardo, 2004). Furthermore, individuals who integrate conceptualisation and experience with action and reflection are generally more flexible in their learning (Boyatzis & Kolb, 1999).

Constructivist approaches and adult learning theory, or andragogy, emphasise the importance of learners linking prior knowledge and experience to new knowledge and skills, especially when their relevance is perceived. The difference here is that adult learners perceive a need to increase knowledge, thus having increased motivation to learn (Kraiger, 2008). Knowledge is not constrained to what's in the head, but includes the ability to actively participate with competence in the real world, in real complex relationships, organising plans and information according to context, using discretion in applying rules and theories, being reflexive, involved, rapid, fluid, and intuitive (Gherardi et al., 1998). Knowledge is information combined with experience, interpreted according to context, reflected upon, applied to decision-making and behaviour, created, transferred, used appropriately (Davenport, De Long, & Beers, 1998).

Learning involves a great deal of socially-negotiated meaning, collective and context-rich sense-making, and a high level of abstraction; it is a social practice, where the interplay between interpersonal relationships and the above activities leads to knowledge and skills acquisition and the co-production of insight and understanding (Kraiger, 2008; Nicolini & Meznar, 1995; Richter, 1998). It is also the

process of learning wisdom through experience, not just through artificial tasks and listening to lectures, but through leading and managing in real situations, failing, and learning from failure (Grint, 2007).

Adult learning has different requirements: more student control, more self-directed learning and own goal-setting are required (Wautier & Vileyn, 2004). This learner-centred approach makes the learner an active participant, assuming primary responsibility for learning decisions and outcomes. Using such an active learning approach, self-regulatory, motivational, meta-cognitive, and affective processes are stimulated. The development of complex skills, adaptive transfer, active knowledge construction and internalisation, attention and effort direction, management and control of emotions and affect, learning from errors, self-evaluation, increased intrinsic motivation, and mastery goals and orientation are all activated, leading to higher levels of transfer to the job. Thus it can be seen that learning is not an event but an unfolding process (Bell & Kozlowski, 2008; Boekaerts, 1996). Learning involves four very complex skills: those of forming clear mental models of behavioural intention, linking the latter to cognitive and motivational strategies and a plan of action, monitoring those, and allocating resources accordingly while preserving their well-being (Boekaerts, 1996).

Finally, adult learning and development is very much a maturational and ongoing process. It is both emotional and intellectual (Brown, 2000). It is qualitative, progressive, self-motivated, and directed (Day et al., 2009). It depends on prior knowledge, cognitive and meta-cognitive processes, psychological resources that support learning and change, and life events. Adults tend to develop expertise and maintain it in their areas of specialty (Halpern, 2004).

The design and implementation of developmental/learning programmes, then, is crucial for the learning experience and learning outcomes. Programmes need to encourage participants to utilise complex cognitive and meta-cognitive processes. Contextual learning needs to be emphasised, with different levels of abstraction. Programmes should facilitate the fostering of connections between prior and new knowledge and experience. They should provide the opportunity for meaningful social interaction. Peer scaffolding should be encouraged. More attention should be paid to the learning process rather than just content (Foster et al., 2008). Training and educational providers need to assess what and who needs to be transformed and changed before designing the programme, preferably involving learners as co-producers. When this is done, students are able to learn from the variety and actually enjoy the self-management opportunities created. This leads to higher satisfaction, outcomes, and application (Lengnick-Hall & Sanders, 1997).

There are many models of learning available and driving developmental programmes. These include emulation of mentors, role playing, learning through doing or action learning, learning of concepts, personal growth, case studies, and simulation (Boaden, 2006; Jennings, 2002). Some provide adequate opportunities for reflection while others do not. While a single method may provide a wider range of skills, using several methods concurrently more often results in exposure to a wider variety of situations, thus gaining increased insights and perception of reality. This may be too time-consuming for some, though. According to Jennings (2002), simulation seems to be the preferred and more effective method.

Those responsible for training and development (for example HR professionals and top management) most often do not pay heed to learning theory

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principles in choosing developmental programmes for their employees. As long as they remain unaware of their importance in decision-making, programmes will rarely render the desired impacts and outcomes (Foster et al., 2008). This is unfortunate since learning is crucial to organisational activity and identity (Nicolini & Meznar, 1995). It would do organisations and training providers well to heed the discussed points above if they are to sustain a competitive advantage. Decision-makers should endorse mastery goals (the desire to learn, improve competence and performance, achievement orientation) in the people they send to development programmes (Dompnier, Darnon, & Butera, 2009). They should also pay heed to programme design and learning processes over and above content.

2.5 Developmental Programmes

The aim of any developmental programme is to maximise results, i.e. learning and development. To be able to achieve that, treatment should be adapted to match aptitudes and needs. The aim is to develop lower-level knowledge, skills, abilities, and attitudes (KSAA's) and to jumpstart the process of integrating them over time into higher-level leadership competencies. The developmental process is a long-term one, integrating assessment, challenge, support, and feedback, through an experiential learning process that will result in expert leadership (Day et al., 2009). Participants in developmental programmes need to be trained not only in technical skills and capabilities, but in reflection and introspection, in learning to learn, and in flexibility.

Leader and leadership development usually happens either through formal programmes, job assignments, or self-directed personal and professional development (Boyce, Zaccaro, & Wisecarver, 2010). Recent surveys have revealed that traditional methods of development like on-the-job training, classroom or lecture-based training

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(be they face-to-face or virtually-based) are still the most commonly used, even though today's employees prefer more flexible approaches such as on-demand and "bite-sized" or chunked training, more flexible delivery methods, and a more instrumental focus (Armstrong & Sadler-Smith, 2008). Time is becoming more of a barrier for today's employees, but some still go for more traditional development such as university-based programmes, maybe to escape the less structured environment they are constantly operating in (Armstrong & Sadler-Smith, 2008). Calls to implement more flexible approaches that tailor to working environments and needs are being made by scholars and practitioners alike.

Either way, the primary objectives of training and university-based degree programmes remain to prepare participants to become effective leaders and managers, capable of both appropriating knowledge and using it in practice. But developing KSAAs is not enough. People need to *want* to use them in practice (Boyatzis & Saatcioglu, 2008). This desire to use one's capabilities is generally driven by people's values, motives, motivational drivers, perceptions of their environment, and purpose.

Finally, although leadership and management development are not to be equated, typical training programmes still seem to offer a mix of managerial and leadership related training. It seems that even formal university executive programmes and MBA programmes are developing competencies that are related to excellent managerial and leadership performance. For example, Boyatzis and Saatcioglu (2008) found that MBA programmes are developing cognitive, emotional, social, and behavioural competencies that are key to managerial and leadership effectiveness, and that an MBA education can help people acquire these competencies when the typical lecture is not the only medium used. This, they posit, is because

formal education has incorporated leadership courses and activities into their programmes. In the next section, we will take a look at some management and executive development approaches and how they relate to leadership development. An overview of leadership development follows.

2.5.1 Management and Executive Education

Boundaries within and outside organisations are becoming more blurred such that managers now need to regularly update their skills, capabilities, and competencies to survive and flourish in the workplace. Despite ongoing debates, it appears that many of the competencies needed by leaders have also become managerial necessities that differentiate between outstanding and average managerial performance (Boyatzis, 2008). Managers need to have vision, imagination, flexibility, adaptability; they need to become generalists instead of specialists, they need to be good team workers/leaders, they must be sensitive to and promote cultural diversity. Most importantly, and despite the distinction between leadership and management, most managers need to be good leaders and most leaders need to be good managers too, since both management and leadership are critical to organisations (Bain, 1992; Suutari & Viitala, 2008).

Much of what managers need can be acquired through actually working as a manager, but there still remain some aspects that need to be formally learnt. Given the significant changes organisations are facing – in fact, change being the only constant business factor nowadays (Conger & Xin, 2000) – management and executive education needs to adapt and become more international, integrated, inter-disciplinary, and client-focused (Bain, 1992). In fact, both business schools and their clients are realising this and have initiated radical course transformations in the last

two decades or so in order to rise to the challenge of complexity and global competition (Sharma & Roy, 1996).

Executive education can be used as a very important strategic tool by organisations in order to facilitate strategic transitions and organisational change. According to Conger and Xin (2000), it has moved away from its traditional role of just providing technical or functional knowledge to becoming an important tool capable of leveraging organisational change and building key organisational competencies, including leadership. Furthermore, the focus has shifted to tailoring programmes that are immediately relevant to practical business situations, transferable to the workplace.

Management and executive education arose from the need to provide management training to more mature and experienced managers (Crotty & Soule, 1997). Programmes arose, either university-based or in-house, in response to this need. One such example is the executive MBA. Nowadays, both degree-based and non-degree based management development programmes are being developed more flexibly, responding more to the demands of organisations: adopting a variety of new approaches, stronger, action-learning approaches, up-to-date and practical learning, more sophisticated technology, distance-learning options, and tailoring to specific organisational goals. Student-centred and client-based approaches are being demanded and used, drawing from international content and experience (Crowther & Carter, 2002; Dizik, 2009a; Prince, 2002). Programmes are focusing on becoming more relevant and applicable, as well as helping managers withstand economic downturns (Dizik, 2009b).

Managers and leaders are being pressured to change their approaches, with organisations either leaving them to seek professional development on their own or providing them with developmental opportunities themselves. Either way, most people look to formal management education programmes first. These tend to be mostly classroom-based, introducing managers to new concepts and situations that may be transferred to the workplace (Longenecker et al., 1998). This approach has been criticised as being piecemeal and crisis-driven, expensive, and having limited ROI and transfer of learning, as well as being expensive (Longenecker et al., 1998). Nonetheless, different studies have found evidence of their effectiveness (c.f. Boyatzis & Saatcioglu, 2008). Managers and leaders, though, need to be further stimulated by challenging job assignments, action learning, interpersonal relationship management, foundations for good decision-making, performance appraisals and 360-degree feedback, opportunities for practice, on-the-job learning or job rotation, developing skills in listening and communication, conflict and problem resolution, simulations of problems, case studies, role playing, and management games (Longenecker at al, 1998; Rausch, 2004, 2007; Day, 2000; Keys & Wolfe, 1988; House, 1975). Furthermore, they need the support of their boss, peers, and subordinates – to be able to actively share and implement their learning (Liedtka, Weber, & Weber 1999).

Management education and training programmes are resorting to the use of "living cases", i.e. participants' own current challenges and problems. Furthermore, assessment and feedback have been incorporated into programmes, adding the possibility of reflective learning (Keys & Wolfe, 1988). Pre-programme and post-programme assessment helps identify specific needs, inform programme content,

measure effectiveness and long-term impact, and identify the need for adjustment in programme content or delivery methods (Conger & Xin, 2000). Important to note is that often assessment measures what people know rather than what they do, thus the superiority of 360-degree feedback in most cases.

There are four main broad reasons why people choose to enrol in executive education programmes: the first is for personal reasons, i.e. wanting to develop, realising the importance of continuous learning and updating of skills in order to improve performance and get ahead; the second is for organisational reasons, in order to contribute to organisational success, objectives, and changes. Sometimes people enrol because of others' encouragement, experiences, or suggestions by their boss or CEO. Otherwise, the reasons are self-serving, i.e. needing a break from job routine, setting personal standards of success and endeavouring to attain them, etc… (Long, 2004).

Needless to say, management and executive development should not be regarded as a one-time event. It is an ongoing process, more of a marathon than a sprint (Owen, 2004), catering for changing demands. The "course" attended should just be one part of this ongoing developmental process that can actually yield very high dividends (Kovach, 2000). When viewed by participants as a one-time event, they go back to work, try to implement their learning, then give up and return to their old ways when they meet resistance or realise that everyone else is doing the same old thing anyway (Kovach, 2000; Haskins & Clawson, 2006).

For these reasons, the purpose of management development needs to be explained a priori by top management. Furthermore, leadership requirements and

individual needs must be assessed in order to match the learning process and content

with organisational and individual needs, and only then can programme effectiveness

be increased (Kovach, 2000). This is why it is important that education and training

providers pay great attention to programme design, interest and relevance, suitable,

knowledgeable, up-to-date, and challenging instructors, strategic challenges and

leadership implications, having participants make the links, using action-learning and

other tools relevant to the adult learning process, and creating accountability systems,

coaching relationships, collaboration opportunities, and the likes (Haskins &

Clawson, 2006). Only then is learning internalised and change put into action.

More and more management education programmes are focusing on

leadership development as an integral part of their objectives. Employers are realising

the need to equip their employees with core leadership skills and behaviours (Owen,

2004), and education and training providers are responding to this need. Teaching

leadership has long been a challenging issue, since what can be taught in a formal

setting is limited (Bain, 1992). Hay and Hodgkinson (2006) suggested adopting a

process-relational approach to leadership in order to aid in the teaching process. This

approach does greater justice to the complexity of leadership and organisational life.

Leadership is seen as integral to management and this approach helps managers and

management educators make sense of the messy activity of managing.

Similarly to more formal management and executive education and

development programmes, training approaches have shifted from being top-down

interventions to focusing on the learning process being an ongoing activity and on the

learner as participant in the learning process, taking responsibility for his/her own

learning (Sloman & AlDowayan, 2004). Most training programmes depend on

Kirkpatrick's model of evaluation (Kirkpatrick, 1994), which posits four levels of evaluation: reaction to programme, knowledge and learning (change in attitudes, knowledge, skills), behavioural change, and results in terms of business impact due to programme attendance.

Training programmes need to be designed to reflect the ever-increasing complexity of work and performance requirements. This is done by breaking down training goals into sub-goals for different stages of the training process, and breaking down the training environment into sub-environments, taking into account trainee characteristics since those have proven crucial to training success (Herold, Davis, Fedor, & Parsons, 2002). Different trainee characteristics and personality dispositions (high conscientiousness, high achievement motivation, low anxiety, tolerance for failure, openness to challenges) seem to be linked to direction, level, and persistence of effort (Research Report, 2010). How trainees interact with specific training phases and situations need to be taken into account in the design of training programmes.

Finally, whatever the developmental method, in order to change and develop, a person must have the desire and motivation to change, must know what to do and how to do it, must work in the right environment, – conducive to change and supportive – and must be rewarded for that change (Herold et al., 2002).

2.6 Leadership Development

With worldwide economies in deep recession, rampant unemployment, job insecurity, constant change, shifting structures, and financial crises facing the world today, it has become more important than ever to allocate resources wisely and in a manner that brings added value and tangible return on investment. Despite these

challenges, leadership and management development remain an area of significant investment. Most leaders and organisational decision-makers believe that leadership and management development are important and worth investing in, and thus leadership development still seems to be prominent on organisational investment agendas (Riggio, 2008; Avolio, 2004; Mensch & Dingman, 2010).

Leadership is the foundation for progress, and strong leadership the cornerstone for success. Since leadership is highly important and complex, then *where* can we find individuals who are able to master this complexity? Can leadership be taught? Although leadership was long thought to be an innate aptitude, with this attitude being firmly entrenched in many decision makers' minds even today, research has shown that this is not really the case. Behavioural geneticists have posited that rarely has more than 50% of variability in behavioural traits been explained by genetic factors. Differences have been found to be mostly environmental in origin (Plomin & Daniels, 1987). Furthermore, research on twins in both shared and unshared environments has found that heredity accounts for only around 30% of leadership emergence, whereas the remaining 70% is a direct result of experience (Arvey et al., 2006, 2007). These studies concluded that life context and experience explained leadership emergence over and above heritability factors. The leader development process is a lifelong story of experience, self-knowledge, sense-making, and trigger events (Avolio, 2005; Luthans & Avolio, 2003). Thus leadership is now believed to be a learnable process, that it is partly a set of skills or competencies that can be learnt over time (Day et al., 2009).

According to Van Velsor and McCauley (2004), leadership development is the "expansion of a person's capacity to be effective in leadership roles and processes"

(p.2). It is about personal development and transformation (Hall, 2004; Mensch & Dingman, 2010), continuous and systemic growth and change over an individual's career or life span (Day & Lance, 2004; Avolio, 2004), a metamorphosis in competencies and actions (Boyatzis, 2008), development of large repertoires of domain-specific competencies (Lord & Hall, 2005), and gaining new knowledge and skills in order to increase effectiveness and fit between role requirements and leader identity (Klein & Ziegert, 2004; Hall, 2004).

Now leadership change is complex in itself; it is more than just change in behaviour. It is a process of internalising learning, giving meaning to events and feedback, making sense of positive developmental interventions, emulating role models, responding to external and internal catalysts, integrating values and beliefs, sense of self, and aspirations, incorporating role changes, responding to organisational factors, and using external support (peer and organisational). It is certainly not a linear process, rather an evolutionary one (James, 2008).

Leadership development is not the same as management development. While management development focuses more on technical aspects associated with formal positions, leadership development focuses on leadership as a complex process in context, taking an integrative social approach, beyond just individual skills and abilities (Day, 2000), concerned with the social, relational, and interpersonal, as well as the human, individual, and intrapersonal dimensions (McCauley, Moxley, & Van Velsor, 1998). The focus is on how each and every person involved can make a contribution. This approach puts greater emphasis on social awareness and relational skills including trust, commitment, respect, and competence. Leadership development

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encompasses the context within which leadership operates as well as individuals' personal development.

Huge amounts are being spent on developmental initiatives, given the perceived importance of leadership development, and given the shortage of effective leadership talent (Vardiman, Houghton, & Jinkerson, 2006). In fact, over $10 billion is spent annually in the U.S. alone (Hannah & Avolio, 2010). Yet research is claiming that compared to the amount of resources invested in training interventions, very little return on investment or transfer of skills to the job is being perceived (Baldwin & Ford, 1988). This may be due to a plethora of organisational, situational, environmental, and individual factors. For example, some of the very organisations who invest heavily in developmental programmes then proceed to quench any initiative or leadership shown by participants in these programmes. A lot of attention seems to be focusing around this issue of return on investment at this point when economies are struggling, resources are scarce, and relatively immediate results need to be perceived. Researchers have emphasised the vitality of measuring the impact of leadership development and laying a proper groundwork for evaluation since outcomes span a variety of levels and areas (Boaden, 2006; Martineau, 2004).

In summary, leadership development is the expansion of the capacity to be effective in leadership roles and situations (Van Velsor & McCauley, 2004) and is the process whereby skills, competencies, and capabilities are acquired that enhance leadership effectiveness (Klein & Ziegert, 2004). Finally, if leadership really is the most important competitive advantage that organisations can have in today's markets (McCall, 1998), then developing leadership is of the utmost importance and should be a top priority, thus should be given considerable attention, both in theory and practice.

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Driving this study are questions such as: what aspects of leadership can be developed, and how? How do people learn and sustain learned skills? How can development best be stimulated and enhanced? Do some people learn better and faster than others? What is it that impacts learning? How can people who are more apt to learn be spotted and targeted? These are very important questions that may well help practitioners focus and make better choices regarding who to develop and who will likely provide more and faster return on investment from training and development initiatives.

2.6.1 The Leadership Development Process

Individuals and organisations are increasingly seeing the need for development and self-development. Research has yet to identify what individual characteristics predict the proclivity towards self-development and self-directed learning. One study by Boyce (2004) found that people with more work, career-growth, and mastery orientations seem to be more motivated towards and skilled at self-development. Boyce also posited that individuals will engage in these activities if they value being more effective leaders, believe that self-development will help them become more effective leaders, and believe in their ability to develop.

The three most important elements for a good developmental context seem to be assessment, challenge, and support (Van Velsor & McCauley, 2004). Rich developmental experiences that include the right mix of these three should be created. To enhance the learning experience, a broad variety of tactics should be used to get the individual to step out of habitual patterns and responses and try new methods and techniques. Furthermore, a context or environment conducive to this kind of learning and development must be ensured or created. Day and Harrison (2007) and Avolio (2004) highlight the fact that leadership development is a multilevel process and thus

must include a multilevel perspective, involving the leader, relationships with followers, peers, and superiors, and organisational climate and culture. These three levels need to be taken into account for sustainable leadership development, in order to assess how organisational and individual factors interact in the developmental process (Hannah & Avolio, 2010). Research needs to focus on the whole context (relational, organisational) within a longitudinal time frame.

Good leadership development builds on a foundation of leader development. Approaches to leadership development have changed and evolved as the understanding and definitions of leadership have. There seem to be four broad areas typically used: skill-building (practical such as negotiations, strategic planning), concepts (theoretical such as distinctions between leadership and management, leadership styles), outdoor adventures (team building, resilience), and feedback (360-degree-feedback) (Boaden, 2006). Researchers are advocating a broader focus to parallel the variety of views and perspectives on leadership and to enable development of the discretionary aspects of leadership (Boaden, 2006). It is suggested that leadership development should focus on advancing positive cognitions, affect, goals, values, expectancies, self-regulatory mechanisms, on leadership self-efficacy (Hannah et al., 2008), on negotiation, networking, conflict resolution, communication, openness, self-awareness (Hay & Hodgkinson, 2006), on the personal side of leadership (caring for others, morality, ethics...) over and above the professional (technical skills which cover the range of competencies discussed above) (Mastrangelo et al., 2004), on developing the ability of people to release their intelligence, creativity, and initiative, and the huge reservoir of untapped potential (Simmons, 1993), and on other relational aspects of leadership (Avolio & Gardner,

2005). Yet others suggest that experience-based leadership development and learning is the best approach (Thomas & Cheese, 2005; Grint, 2007). Grint (2007) highlighted the need to address technical *know-how*, understanding (*know why*), and practical *wisdom*, the latter possibly being the most important.

According to Olivares (2008), leadership development initiatives should be goal and task relevant. They should be socially embedded, require a great deal of reflexivity, and should pose a challenge in increasing self-efficacy. They are all about learning and sense-making. A study by Leskiw and Singh (2007) found that six factors are vital for effective developmental initiatives: a thorough needs assessment, suitable audience selection, infrastructure to support the initiative, an entire learning system design, an evaluation system, and reward systems for success and improvement. Moreover, Scott and Weber (2008) suggested that career stage and aspirations, visionary capacity, boundary-breaking entrepreneurialism, professional skills, instructional design and assessment literacy, and crisis management, should all be taken into account in leadership development programming.

Leadership development starts with an understanding of limitations (Mensch & Dingman, 2010) and clarifying strategic worldviews (Mostovicz, Kakabadse, & Kakabadse, 2009). Thus the process typically starts with a developmental and training needs analysis which then clarifies training objectives. Needs assessments need to be conducted both at the individual (increasing capabilities) and organisational (collective leadership capacity) levels and must be aligned to overall mission and vision (Riggio, 2008). Moreover, a holistic systems perspective, encompassing organisational, societal, stakeholder, and ecological needs must be taken in approaching leadership development (Waddock & McIntosh, 2009).

2.7 Developmental Outcomes

Organisations are using management and leadership education to create a competitive edge (Longenecker & Ariss, 2002). For this to happen, these developmental efforts need to ensure a good ROI, i.e. actual learning and change in behaviour that translates to the workplace. To ensure ROI, several factors need to be attended to. First, a proactive posture needs to be taken to management education by top management (buy-in and commitment). Visible organisational commitment to development seems to be closely associated with positive outcomes (Mabey & Thomson, 2000). Second, to maximise learning, the quality, methods, and design of programmes need to be attended to and researched (Mabey, 2002). Content needs to be controlled, and relevance should be a top priority. Otherwise no transfer of knowledge and skills will occur (Longenecker & Ariss, 2002). According to Longenecker et al. (1998), increasing ROI entails having credible, dynamic, skilful, and effective instructors, engaging in a practical, experience-based, relevant, and stimulating learning process, and being in an open, participative, exchange-based learning environment which stimulates and encourages introspection, reflection, and self-assessment. The outcomes should be actual learning and a change in managerial and leadership behaviour and approach. ROI means increasing participants' skills and enhancing their actual performance on the job.

Developmental programmes would be useless if they did not provide tangible outcomes. Important to note, though, that outcomes may not be immediately perceivable beyond the positive reaction to training effects. They need time to be transferred into measurable behavioural and attitudinal change. Thus development is not always perceived to achieve maximum effect (Burgoyne et al., 2004).

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Developmental initiatives need to be evaluated in a coordinated, longitudinal manner and we need to have a good understanding of the effects of training and their dynamics (Burgoyne et al., 2004). Furthermore, assessment needs to happen at the reaction, learning, behavioural, and results levels (Riggio, 2008).

Developmental programmes often suffer from poor transfer to the workplace (Day, 2000; Hall, 1996). Numerous calls have been made for training and developmental initiatives to teach for transfer (Halpern, 2004). Often the relevance of classroom-based developmental programmes that occur off-site may not be immediately tangible to trainees. Now several variables have been linked to the level of transfer of training achieved, including the perception of the relevance and usefulness of the training received, motivation to learn and apply what was learned, amount of autonomy and control in the job (Axtell, Maitlis, & Yearta, 1997; House, 1968), and the level of organisation, supervisor, and peer support (Cromwell & Kolb, 2004; House, 1968; Vardiman et al., 2006). Organisational environments that are supportive, empowering, but also demanding help sustain leadership development over time (Day et al., 2009; Research Report, 2010). Length of time since training was completed seems also to be an important factor in determining how much transfer of training has really occurred (Day et al., 2009; Boyatzis, 2008).

It is difficult to accurately assess programmes' effectiveness and usefulness. Time needs to pass for assimilation and implementation of learning (Conger & Xin, 2000). Many learning experiences tend to be short-lived and transfer back into the organisation limited. Whether the programme attended is formal degree or non-degree, in-house or externally provided, university-based or conducted by one of the many training bodies available, significant uncertainty still surrounds the question of

ROI. Most training events still deliver their content and measure its outcomes in terms of satisfaction immediately after the event (Terry, 2005). Terry (2005) emphasises the need to shift approach by addressing business performance objectives and measuring effectiveness in the way businesses measure theirs – over time. Terry stresses the need to define outcomes desired, design complete experiences, deliver content for application, follow through and support learners long after training is over, and document results.

Some have evaluated development programme outcomes in terms of developmental objectives achieved, impact on the organisation, and personal satisfaction with the programmes (c.f. Thomson, Mabey, & Storey, 1998; Mabey & Thomson, 2000). These evaluations tend to be more subjective than objective, though. Others have even assessed developmental outcomes as a function of the amount of training or number of days, paying little heed to programme quality and content, as pointed out by Mabey (2002). A survey of UK companies found that other outcome measures used include productivity indices, sales targets, customer satisfaction, profitability, turnover, balanced scorecard, as well as other general efficiency measures (Mabey & Ramirez, 2004).

Researchers have found evidence of substantial and sustainable effects of leadership and management development programmes. For example, Jarzabkowski, Giulietti, Oliveira, and Amoo (2009) found that managers with higher levels of formal business education, higher exposure to management training, and more specific strategy education tend to use more strategy tools. Management training seemed to have a strong impact on managers and time since completing formal education had no significant effect on the tools used and acquired. Little amnesia effect was found, and

management education was found to increase eagerness to incorporate learning into the workplace, increase self-confidence and sense of self, increase reflexivity, and increase career moves and advancement. In addition, more management education resulted in increased discretion over tool selection (evaluative skills). Buckley, Monks, and McKevitt (2002) found that the developmental programme they evaluated met its goals in terms of developing targeted skills and abilities. Avolio et al. (2009) found that leadership interventions did have positive impact across various intervention types and leadership levels, and had a 66% probability of achieving positive outcomes compared to the 50/50 random effect. An analysis of some UK organisations found significant relationships between competency-based development and subsequent performance, both at the individual and organisational levels (Winterton & Winterton, 1997). Other studies also found that skill acquisition had the biggest impact on productivity and profitability (see Mabey, 2002). There seems to be some immediate deterioration in perceived effectiveness over the first few months after training, but according to Liedtka et al. (1999), this seems to level off after a while and effectiveness is still noticed. It seems that sharing learning, particularly with peers and subordinates, greatly helps in sustaining learning.

In summary, development programmes do seem to have the required effects and outcomes, though more systematic and longitudinal evaluation is needed. The aim and purpose of any leadership, management training, executive education, or formal degree programme is to initiate and make possible a change in capabilities and competencies that result in better management and leadership in practice. Thus one intention of this study is to further provide confirmation of the often debated usefulness of these developmental interventions. It is therefore hypothesised that

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leadership and management development programmes will lead to leadership

development, here operationalised as a change in competencies (figure 2).

> *Hypothesis 1: Management and Leadership Development programmes will*
>
> *be positively associated with the development of leadership competencies.*

Figure 2 - The relationship between developmental programmes and outcomes.

2.8 From Novice to Expert

The ultimate goal of learning and development is acquiring expertise and

reaching ultimate performance levels. Learning occurs differently for different

individuals, and is acquired at different rates (Howard, 2009). An area of research that

may be of interest is the novice and expert literature. A novice is a person who is new

to a certain field, whereas an expert is one who has had prolonged experience and/or

education in that field. Needless to say, novices and experts learn, assimilate

knowledge and experience, and develop differently (Dreyfus & Dreyfus, 1986;

Howard, 2009).

Novices typically go through five stages in their developmental journey

towards expertise. The first stage is where rules are rigidly followed (novice),

followed by a slightly more flexible stage where rules are still followed nonetheless

(advanced beginner). The next stage is where more goal-oriented plans are followed

(competent performer), followed by the stage where enough experience has been

accumulated for informed decision-making and prioritising (proxcient performer). The final stage (expert) is where rules are no longer relied on and decisions are made more intuitively and almost unconsciously (Dreyfus & Dreyfus, 1986). A similar model developed by Howell (1982) for communication competence may also reflect the learning trajectory in an area or competence. The model also depicts a five-stage process: unconscious incompetence, conscious incompetence, conscious competence, unconscious competence, unconscious super-competence (Tung, 1998). These portray the path from novice to beginner to performer to expert. Unconscious processes tend to be rigid and unaccommodating, thus inhibiting new combinations and associations in the learning process (Rossano, 2003). Thus consciousness is necessary when novel representations, responses, and behaviours are to be learnt and acquired, and when expertise is being developed.

Expertise is developed through experiential learning (Kolb, 1984), where experience, interactions, transactions, reflection, observation, experimentation all play a key role. Reflection-in-action, transformative learning, and critical reflection are all essential for the development of expertise (Tynjala, 1999), where meta-cognitive and reflective abilities are activated, and where "theorising practice and particularising theory" are the key elements of development.

Knowledge must be applied (can a jet be flown without extensive practice?). Thus another key element of expertise development is practice – actual, deliberate, persistent, and focused practice – and adaptation (Howard, 2009; Ericsson & Charness, 1994). Expertise is developed slowly over a good number of years and as a result of deliberate efforts at improvement (Ericsson, Krampe, & Tesch-Romer, 1993) and extended training (Ericsson & Charness, 1994). This requires time, effort,

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resources, commitment, motivation, and patience, since practice is not always enjoyable or motivating. The effect of practice has even been argued to surpass and limit the role of innate characteristics earlier believed to explain experts' superior performance (Ericsson et al., 1993)

Expertise includes advanced problem-solving processes, a great amount of knowledge, advanced knowledge organisation, an ability to use knowledge effectively, creative ability, automatised actions, and practical ability (Sternberg, 1997). Expertise means mastering knowledge and techniques, being fast and accurate, and having superior memory for representative stimuli in one's domain, (Ericsson et al., 1993). Expert performance is where the highest levels of performance are attained in a certain domain, including most everyday activities such as thinking, comprehension, problem solving, sports, finance, and management. To reach expertise, studying expert performance may prove highly beneficial (Ericsson & Charness, 1994).

Outstanding expert leaders seem to have three clusters of competencies that differentiate them from average performers: cognitive competencies, emotional intelligence competencies, and social intelligence competencies (Boyatzis, 2008). Furthermore, expert knowledge seems to be divided into formal knowledge, practical knowledge, and self-regulative knowledge (Tynjala, 1999), and expert performance is mediated by cognitive and perceptual-motor skills (Ericsson & Lehman, 1996). Thus expertise development is a long process, where theoretical and practical knowledge are integrated to form a coherent whole (Tynjala, 1999), where challenges are continuously defined and redefined at higher levels, where continuous effort is made to invest mental resources, build deeper understanding, and single-mindedly apply

and practice what is learnt (Lykken, 1998). Finally, a critical difference between novices and experts is the way and the patterns in which cues are organised, stored in memory, and retrieved, and the way in which this knowledge is used as a result (Rossano, 2003).

2.8.1 Students versus Executives

One can apply the above discussion to distinguish between students and executives. Students following graduate degree with less work experience and less exposure to challenging leadership and managerial situations are expected to be at the novice and beginner end of the spectrum. On the other hand, executives with several years' work experience, as well as the natural life experience that comes with age, are expected to be closer to expertise.

Students (novices), for example, tend to work individually, relying on memorisation and mere reproduction of knowledge rather than cooperation, knowledge-sharing, and experiential learning, especially in competitive settings. On the other hand, more experienced people (experts) tend to value teamwork and knowledge-sharing in their search for new ways to acquire, apply, and transform new knowledge (Tynjala, 1999).

This should have some bearing on students' and executives' competency levels as well as learning and development acquired both from life experiences and developmental interventions. Students would be expected to have a more restricted or narrower learning experience, whereas executives should learn in a more efficient and targeted way that is relevant to their domain of expertise (or desired expertise). On the other hand, the role of developmental readiness in moderating development (which

will be discussed in the next chapter) is not expected to be any different across the two groups given a particular level thereof. Its role is expected to hold across age, experience, and expertise. Thus the following hypotheses are suggested:

> *Hypothesis 2a: Students will have lower leadership competency levels than executives.*

> *Hypothesis 2b: Students will develop leadership competencies at a lesser rate than executives.*

2.9 Chapter Summary

In this chapter we have discussed leadership and its importance. Leadership is "a process of social influence in which one person is able to enlist the aid and support of others in the accomplishment of a common task" (Chemers, 2000, p.27). Leadership is emphasised in management and organisational discussions, and seems to be more of a focus in developmental initiatives, be they management or leadership oriented, across different organisational levels. It has been linked to performance, motivation, effectiveness, and competitive advantage. Competencies (cognitive, social, emotional, and behavioural) seem to be a primary focus, though some have challenged that approach. Leadership development is the "expansion of a person's capacity to be effective in leadership roles and processes" (Van Velsor and McCauley, 2004, p.2) and the process by which knowledge and competencies are gained which enhance leadership effectiveness in as wide a range of situations as possible (Klein & Ziegert, 2004). Management development is now inherently including leadership as a main element. Different approaches are used in management and leadership development and training, based on different (adult) learning theories.

There seems to be some ambiguity regarding their effectiveness in delivering the required results and ROI, but recent studies have found evidence of positive outcomes and ROI. It is hypothesised here that leadership and management development programmes will lead to leadership development. The chapter concludes with a discussion of novice versus expert learning and performance, highlighting implications with respect to students and executives in terms of competencies and the development thereof.

What, then, may aid in this developmental process? Are there individual characteristics that help define and determine individuals' proclivity to learn and develop? Given a developmental initiative, would all participants be expected to develop equally? What determines variability in developmental outcomes? The next chapter will introduce the concept of Developmental Readiness, one that may well provide an answer to some of the above questions.

CHAPTER 3 – DEVELOPMENTAL READINESS

3.1 Chapter Overview

This chapter introduces Developmental Readiness (DR), a construct which has many implications and may well explain why different outcomes are observed from the same developmental interventions. First, a discussion of self-awareness, self-regulation, and self-motivation is presented, these being suggested to be the key underlying dimensions of developmental readiness. These three meta-competencies encompass the cognitive, social, emotional, and behavioural competency domains discussed in the previous chapter and have been proposed to be key to leadership development (Day, 2000). Next, developmental readiness is discussed, drawing on existing conceptualisations of the construct and providing a definition and conceptualisation here that encompasses previous definitions and adds a further dimension to it. Finally, the role of developmental readiness in development is discussed, hypothesised to moderate the developmental process.

3.2 Introduction

Individuals differ in many ways and at many different levels. Areas in which they differ include but are not restricted to competencies, capabilities, as well as the way and the extent to which they are able and willing to learn and develop, their learning styles, the actual learning they acquire, and whether they sustain that learning over time (Dreyfus, 2008; Day et al., 2009; Halpern, 2004).

To reiterate, why do we develop leadership competencies? We do that in order to prepare individuals to handle different and complex situations; in order to increase their likelihood of success across as wide a range of situations as possible. This

cannot be guaranteed by development alone, but development increases the *probability* of success (Avolio et al., 2009). Since that probability is limited by the match between competencies acquired and situations faced, as well as organisational support in applying learning acquired (Amit et al., 2009), then the goal of leadership development is to continually increase that probability, spanning an ever-increasing range of competencies and situations.

For the above reasons, it would be very beneficial if some way is found to gain efficiency in developing leadership. Thus the need to define a construct that may help understand the mechanisms through which leadership develops. A construct which, if found in individuals, would help accelerate their ability, and influence the way and the extent to which they learn those competencies, i.e., *how well they can develop and learn leadership*. This can be captured by the notion of an individual's *readiness* for leadership development, or Developmental Readiness. Normal leadership development models usually have three main factors: new knowledge, experience, and reflection. The Center for Creative Leadership also suggested an important fourth dimension that may be key to leadership development (Chappelow, 2004). That dimension is readiness and willingness of individuals to learn and develop and to take part in developmental initiatives offered, or even to seek out such events. There are two levels of readiness (individual and organisational), and two aspects of individual readiness (psychological and environmental) (Ting & Hart, 2004). Individuals need to be both psychologically ready and willing to devote time and effort to learning, as well as have the required environmental conditions (right timing, resources, organisational support, etc…). The organisation within which the individual works

also needs to be ready to support and encourage change and learning as well as providing the necessary arrangements and resources.

Day (2000) highlights three main capabilities associated with leader developmental initiatives: self-awareness (SA), self-regulation (SR), and self-motivation (SM). These, according to McCauley (2006), serve as the foundation of intrapersonal competence. Day (2000) focused on SA, SR, and SM as forms of intrapersonal competence needed and used in leader development at the individual level. Self-awareness includes emotional awareness, self-confidence, and an accurate self-image, self-regulation includes self-control, trustworthiness, personal responsibility, and adaptability, while self-motivation includes initiative, commitment, and optimism. On the other hand, Day stresses the need for social awareness (empathy, service orientation, and political awareness) and social skills (building bonds, team orientation, change catalyst, and conflict management) as interpersonal competencies needed in leadership development since the latter needs to address the interaction between individuals and their social and organisational environments. Leadership development needs to address both the intrapersonal and interpersonal competencies in order to be comprehensive and holistic, thus addressing the complexity of leadership in context.

Other discussions on leader and leadership development focusing on competencies (and meta-competencies) have highlighted the importance of self-awareness, self-regulation, and self-motivation. Avolio (2004) posited that enhanced self-awareness is the starting point of leadership development, and that for proper leadership development to take place, self-awareness must be sustained, and self-regulation reinforced. The three meta-competencies self-awareness, self-motivation,

and self-regulation are important psychological resources that influence development of competencies and help leaders learn; they are important and necessary aspects that enhance the developmental journey (Day et al., 2009; Hall, 2004; Amit et al., 2009; Riggio, 2008; Halpern, 2004).

Whereas Day (2000) suggests that SA, SR, and SM are needed for leader development (individual level), what is argued in this study is that it is precisely these three competencies that are needed in order for *both* leader and leadership development to take place effectively (i.e., at all levels), or rather, to be accelerated. These three competencies will be argued to encompass the emotional, cognitive, social, and behavioural competency domains discussed in chapter 2. It is suggested here that when these three competencies are targeted and developed, the learning of the other (lower-level, technical, procedural, and contextual) competencies is greatly enhanced. Furthermore, it is suggested here that self-awareness, self-regulation, and self-motivation constitute an individual's Developmental Readiness. Let us now take a look at each of self-awareness, self-motivation, and self-regulation in slightly more detail before engaging in a discussion of Developmental Readiness.

3.3 Self-Awareness

"Know Thyself." Socrates

Are leaders sufficiently self-aware to be reflective in an adaptive manner? (Hannah et al., 2008). Self-awareness has consistently been identified as critical to good relationships (Goleman, 2006), good or effective leadership (Ashford, 1989; Burke, 2004; Bennis & Nanus, 1985; Luthans & Avolio, 2003; Riggio, 2008; Taylor, 2010), and effective performance (Bourner, 1996; Fletcher & Bailey, 2003).

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According to George, McLean, and Craig (2008), self-awareness is a pivot for balanced development and orientation, and for gauging one's authenticity.

Four main theories drive the self-awareness literature: objective self-awareness theory (OSA – Duval & Wickland, 1972), self-monitoring theory (Snyder, 1974), self-consciousness theory (Fenigstein, Scheier, & Buss, 1975), and control theory (Carver, 1979). **OSA theory** claims that individuals make a choice in focusing on or away from the self. When focus is geared towards the self, more self-evaluative processes are triggered and the desire for consistency is greater (Taylor, 2010). When people perceive discrepancies, they will then be motivated to improve because when they have greater understanding of what characteristics are needed for improvement, they are in a better position to improve, and the negative reaction incurred will motivate this self-improvement (Duval & Wickland, 1972; Duval & Silvia, 2002; Silvia & Duval, 2002). **Self-monitoring theory** suggests that people try to align and match their behaviour to what is socially expected using the feedback they get from their social interactions (Snyder, 1974). This is done by observing their own and others' behaviour, forming a notion of what is expected, and matching future behaviour to their appropriate context expectations. High self-monitors are able to focus on both external and internal cues and react accordingly. The construct of self-monitoring was found to be convergent with self-awareness, where people low on self-monitoring seeming to behave more in line with their inner states than high self-monitors, but the latter having more accurate self-assessments (Church, 1997). Self-monitoring seems not to be geared towards manipulation as some may think, rather towards being sensitive to social cues, adaptation, and high social awareness (Miller & Cardy, 2000). **Self-consciousness theory** proposes two dimensions, public and

private self-consciousness, combining introspective aspects with outside reactions to the self (Fenigstein et al.., 1975). Private self-consciousness is concerned with internal aspects of the self such as thoughts, reflections, and introversion, and evaluation is internally construed. Private self-consciousness reflects a propensity to assess one's behaviours as well as having access to better-developed self-schema (Church, 1997). On the other hand, public self-consciousness is geared more towards others' reactions to the self, with a focus on outside evaluation. Cues and standards for self-evaluation are other-dependent. Self-awareness has been defined in terms of public and private self-consciousness in the literature (Young & Dulewicz, 2007), where focus on the self seems to be more in terms of internal states, public appearances, and social anxiety (Church, 1997). Finally, ***control theory*** proposes that when significant or seemingly insurmountable challenges are faced by individuals, the natural response would be to back away or try alternative solutions to the problem at hand. When self-efficacy and self-confidence are higher, though, individuals will more accurately perceive their own discrepancies and increase efforts to rectify these discrepancies. Control theory suggests that when individuals perceive these discrepancies between their desired state and their actual state through feedback systems and cognitive appraisals of the situations faced, then a course or courses of action are taken to rectify that discrepancy (Carver, 1979; Carver & Scheier, 1981, 1998). The gap perceived actually acts as a motivator for change (Peterson, 2006). In this study, the self-monitoring and private self-consciousness theories were used primarily in assessing self-awareness since they capture both the internal and externally oriented aspects of self-awareness, and control theory as a basis for both self-awareness and

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self-regulation. These capture the aspects of self-awareness that have bearing on individuals' development.

Self-awareness has also been central to the conceptualisation of emotional intelligence (Young & Dulewicz, 2007), which emphasises its importance in bridging the gap between intellect and emotion (Zeidner, Matthews, & Roberts, 2004). Emotional intelligence encompasses emotional self-awareness, self-regulation of emotions, and social awareness, among other factors. The common theme across these guiding theories is that one must have an understanding of the internal workings of the self and of how one is perceived by and affects others. Thus self-awareness has both an internal and an external function.

Self-awareness is an evolving process, where a person seeks to gradually understand his/her uniqueness, talents, strengths, weaknesses, values, beliefs, desires, purpose, and inner personal resources, and develop easier and quicker access to them (Avolio & Gardner, 2005; Bourner, 1996). It is also the extent to which people see themselves and their level of effectiveness as others see them (Fletcher & Bailey, 2003). As such it is not an end-point in itself, rather a starting point on a journey of self-knowledge, building a self-concept and identity/sub-identities, one of which is a leader identity. Ultimately, the goal of self-awareness is increased self-knowledge and self-acceptance of who one is and who one is capable of becoming (George et al., 2008).

Self-awareness means being in touch with one's constitution, tendencies, moods, emotion, and affect (Mirvis, 2008), being aware of the impact and different impressions one has/makes on others, and being able to incorporate information from

others into one's behaviour (Moshavi, Brown, & Dodd, 2003). It entails bringing to the forefront of one's consciousness the drivers that control and influence one's behaviour, and striving to minimise that control (Bourner, 1996). According to Salzen (1998), there are four levels of self-awareness: sensory-motor self-perception, feeling self-perception, emotional self-perception, and cognitive self-perception.

Self-awareness has been shown to be essential for leaders in order to mitigate patterns of self-deception that result in corporate failures (Sarros, Cooper, & Hartican, 2006), in order to foster the development of authenticity in followers, contributing to their well-being and performance (Avolio & Gardner, 2005), and in order to fuel the process of change and development (James, 2008; Bourner, 1996). Flexibility, resilience, and meta-perception are also significantly increased because of greater self-knowledge (Carlson & Furr, 2009).

In a study by Church (1997), high performers were found to be significantly more self-aware than average and low performers, in that they assessed their behaviours more accurately than others. It also seems that the degree of self-awareness has a noteworthy impact on subordinates in that subordinates of over-estimators are less satisfied than subordinates of under-estimators and in-agreement, the latter two being more concerned with the needs of others than over-estimators (Moshavi et al., 2003). Honest and direct feedback from others and reflection on this feedback (discrepancies, blind spots, vulnerabilities…) is crucial for self-awareness (George et al., 2008). Congruent self-awareness seems to be linked to more accurate evaluation of performance and effectiveness, resulting in a higher degree of self-mastery, lending confirmation to a well-known military leadership belief that one has to know oneself to be able to lead others effectively (Young & Dulewicz, 2007).

Since self-awareness is crucial to effective leadership, then ways should be found to incorporate its development in leadership development initiatives. Challenges facing leaders nowadays make their jobs and roles ever so unpredictable. Increasing self-awareness leaves less room for shock when one's "chips are down" (Bourner, 1996, pp.15). Many leaders think they know themselves better than others, unwilling to recognise that they cannot know themselves if they are not tested, given feedback, and made aware of unconscious processes and experiences that drive and control them and their actions (Bourner, 1996). Research suggests that people are more aware of the actions they intend to take than those that are actually taken (Blakemore & Frith, 2003). Mirvis (2008) suggests that consciousness-raising experiences, ones that deepen awareness of self and others and stimulate introspection and inner work (digging deeper), are those that will help develop leaders better and develop better leaders. Leadership development programmes now sometimes include tools to enhance self-awareness such as 360-degree feedback, personality assessments, and the likes, but more focus on consciousness-raising is necessary. When leaders perceive the need for change, when a gap is identified, then they are more likely to seek improvement (London & Smither, 2002).

In summary, self-awareness involves consciousness of the various aspects of one's identity, needs, values, and motivations as well as the awareness of the congruency (or lack thereof) of self-perceptions and others' perceptions (Hall, 2004). As self-awareness gets sharper through reflection and feedback, development occurs more swiftly. It is a meta-competency that is at the starting point of and can heavily influence the development of an individual from novice to expert (Avolio, 2004; Day et al., 2009).

3.4 Self-Regulation

Carver and Scheier (1981) developed a model of self-regulation which involves a process of self-assessment in evaluating and controlling behaviour. Self-regulation emphasises behavioural, emotional, and motivational regulation, and the act of self-regulation does not occur in isolation, rather stems from social and environmental interactions (Bandura, 1982, 1989; Dinsmore, Alexander, & Loughlin, 2008). At the centre of the concept of self-regulation is the principle that people set themselves certain goals and monitor their progress towards these goals, which thus prompts them to modify their attitudes, actions, and behaviour to reduce any discrepancy perceived. The process occurs through a feedback loop (Lord, Diefendorff, Schmidt, & Hall, 2010).

Self-regulation is the influence exerted by a system on itself in order to correct behaviour. It integrates cognitive, executive, evaluative, and motivational aspects (Bedny & Karwowski, 2006). It refers to processes where people control their own thoughts, feelings, and behaviours, thereby managing their own and others' perceptions of themselves in a manner consistent with their own goals and standards (Hoyle, 2006). People formulate goals congruent with their values and preferences, then try to use strategies to attain them which will also let them experience that compatibility (Taylor-Bianco & Schermerhom Jr., 2006).

Self-regulation is challenging because of its complex nature, and because of all the psychological and temperamental processes involved. Self-regulatory strategies involve being able to clearly represent goals, devise plans of action (and revise them), monitor behaviour (including detecting mismatches), and determine progress

(Boekaerts, 1996). Self-regulation calls for both conscious and unconscious processing of information and evaluation of importance (Bedny & Karwowski, 2006).

The concept of self-regulation is based on work in several areas such as personality systems interaction theory (Kuhl, 2000), self discrepancy theory (Higgins, 1987, 1989), and control theory (Carver & Scheier, 1981, 2002). Personality systems interaction theory (Kuhl, 2000) deals with the cognitive mechanisms underpinning variations in positive and negative affect. Positive and negative affect activate different cognitive systems such as intention or extension memory, intuitive behaviour control, and object recognition. These are governed either by external forces such as demands, rules, and norms or by internal forces such as personal preferences and intrinsic values (Baumann & Kuhl, 2005; Moss, Dowling, & Callanan, 2009). Self-discrepancy theory (Higgins, 1987, 1989) goes back to childhood, when individuals learn about their rights and duties either through a prevention focus (oughts) by seeking to minimise punishment and adverse consequences or through a promotion focus by seeking to maximise rewards and benefits (Higgins, 1997, 1998, 2000). These become sets of standards over time called oughts and ideal self guides respectively, serving regulatory purposes. Finally, control theory (Carver & Scheier, 1981, 1998, 2002), which was discussed above, suggests that when individuals perceive discrepancies between their desired state and their actual state through feedback systems, a course of action is taken to rectify that discrepancy. Other theories such as optimal self-esteem (Kernis, 2003) and the self salience model (Stapel & Van der Zee, 2006) deal with self-awareness and fragility of self-esteem, where the lower these two, the higher the reliance on external affirmation and regulatory guidance (Moss et al., 2009). Self-regulation also overlaps with the

concept of self-management. The two concepts recognise individuals' proactive role in controlling their behaviours, environments, and cognitions (Castaneda, Kolenko, & Aldag, 1999).

According to Boekaerts (1996), cognitive and motivation strategies are intertwined and interact in the process of self-regulation. Cognitive strategies are activated in the regulation of the learning process, where self-regulated learners rely on prior knowledge, meta-cognitive knowledge and skills, giving meaning to learning situations, and similar processes. On the other hand, motivational strategies are activated where awareness of what needs to be done, inclination, sensitivity, choice, level and time of involvement, effort expenditure are the point of focus. Self-regulation is also activated when extrinsically motivated behaviours become internalised (Selart, Nordstrom, Kuvaas, & Takemura, 2008).

Now the absence of self-regulation is noticeable as individuals lose control of their behaviour, which causes deviation from their own standards and goals. Several factors have been shown to influence self-regulation either positively or negatively such as self-awareness and certain personality traits (conscientiousness, impulsivity) (c.f. Hoyle, 2006; Steel, 2007).

Self-regulation seems to be conscious and effortful, although some unconscious processes are activated (Hoyle, 2006). Recent work has shown that the ability to self-regulate can be cultivated in individuals. Furthermore, leaders can play an active role in promoting self-regulation by focusing on values, instilling a sense of purpose and meaning at work, championing diversity, reflecting on moral principles, challenging assumptions and conformity, forging more trust, and promoting an

environment that makes self-concepts more salient (Moss et al., 2009). Leaders thus should become aware of these regulatory processes at work and learn to channel them into useful strategies to maximise their own and others' performance (Taylor-Bianco & Schermerhom Jr., 2006). Self-regulation operates at the individual and at the social/group level (Sassenberg & Woltin, 2008). At the social or group level, self-regulatory processes are activated in similar manners to the individual level. These play a significant role in determining group dynamics and processes at work.

The self-concept plays a very important role in self-regulation. When people become more aware of their actual, ought, and ideal selves, discrepancies lead to dejection, agitation, and such and thus they become motivated to change, activating self-regulatory processes as a result. On the other hand, where concordance is perceived, the individual becomes more relaxed and satisfied (Sassenberg & Woltin, 2008; Carver & Scheier, 1981; vanDellen & Hoyle, 2007). In other words, a discrepancy reducing feedback loop is activated when gaps are perceived between one's current state and one's goal or reference point (Carver & Scheier, 2002). Here there is both an approach (promotion) and an avoidance (prevention) function. People either move towards goals or away from anti-goals or repellers. In the promotion approach, individuals focus on achieving their aspirations, in an eagerness to maximise positive outcomes, whereas in the prevention approach, individuals' focus is on the desire and effort to avoid negative outcomes (Taylor-Bianco & Schermerhom Jr., 2006).

Self-regulation has been linked to development, in that its interaction with self-awareness links the deeper levels involved in adult development to basic competency development and ultimately leadership development (Day et al., 2009).

Learning can be geared towards self-regulation, incorporating its cognitive, emotional, and behavioural aspects (Avolio, 2004).

In summary, self-regulation is the ability to assess, evaluate, control, and rectify thoughts, attitudes, emotions, and behaviour according to own goals and values, and in response to feedback from environment and social interactions. It is important to cultivate self-regulation as a psychological resource that may enhance personal and social processes, as well as learning and development.

3.5 Self-Motivation

"The great leaders of business, industry, and finance,
and the great artists, poets, musicians and writers
all became great because they developed
the power of self-motivation." Napoleon Hill

Humans reflect on themselves, set goals congruent with their expectations, monitor progress towards those – they are self-motivated (Bengtsson, Lau, & Passingham, 2009). They have energy, direction, persistence – they have motivation (Ryan & Deci, 2000). Motivation encompasses aspects of activation and intention. It is at the core of biological, cognitive, and social regulation (Ryan & Deci, 2000). It is a dynamic system or process, posited to be the most important psychological factor impacting efficiency and work performance (Bedny & Karwowski, 2006).

There is a plethora of motivation theories in the literature (goal setting (Locke & Latham, 1990), feedback (Locke & Latham, 2002), expectancy theory (Vroom, 1964), social learning theory (Bandura, 1977), social cognitive theory (Bandura, 1977, 1997), organisational justice or equity theory (Greenberg, 1987), and control

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theory (Carver & Scheier, 1981, 1998, 2002), among others. See Latham and Pinder, (2005) and Klein, (1989) for a review of motivation theories). Motivational frameworks have recognised and incorporated aspects such as needs, traits, values, beliefs, context, person-context fit, cognition, affect/emotions, and behaviour, leading to a better understanding of and ability to predict and influence motivation in the workplace (Latham & Pinder, 2005).

Motivation operates at both the conscious and unconscious levels. According to Bedny and Karwowski (2006), motivation goes through five intimately connected stages. The first stage is an emotional-motivational one which operates at the unconscious level, where information and needs interact. The second stage is where a conscious goal is formulated (or accepted), while the third stage is involved in evaluating the difficulty and significance of the related task(s). The fourth stage is related to the goal attainment process (executive aspects of motivation), and the fifth and final stage is concerned with the evaluation of results. These stages may be in agreement or in conflict depending on several factors and motivational dispositions at each stage.

Various factors have been found to influence motivation. Praise, recognition, acknowledgement are key extrinsic motivators at work (Collinson & Colinson, 2007). Where external motivators are minimal or sporadic, intrinsic motivators play a greater role. People who view their performance as critical for their self-image tend to be more sensitive to learning from errors and tuning behaviour for optimal performance (Bengtsson et al., 2009). Proximal goal-setting serves to cultivate competencies, self-perceptions of efficacy, and intrinsic interest (Bandura & Schunk, 1981). When intrinsically motivated, people look for internal feelings of enjoyment, interest,

excitement, and satisfaction as well as enhanced self-perceptions of competence, autonomy, and relatedness (Selart et al., 2008). They tend to have higher personal standards of excellence than their peers, and thus intensify efforts to achieve especially when they perceive a discrepancy; furthermore, they see their efforts as leading to more mastery (Brunstein & Maier, 2005). The more intrinsic needs are met, the more self-motivational processes activated. These are concerned in pursuing goal-setting and self-evaluative procedures (Bandura & Schunk, 1981), in expending more effort, in eliciting positive cognitions and emotions, and heightening sensitivity, mindfulness, and willingness to accomplish goals (Boekaerts, 1996). This then improves efficacy and job performance.

Stahl (1983) found that people who scored high in motivation tended to have higher performance, higher promotional rates, and tended to have more managerial positions than those who scored low on motivation. Self-motivation increases individuals' ability to regulate their behaviour and performance. Furthermore, self-motivation has been linked to more productive work performance outcomes (Froman, 2010). Personal mastery orientation, learning goal orientation, and career growth orientation are also all positively related to engaging in self-development (Boyce et al., 2010).

In summary, self-motivation is about setting goals congruent with one's expectations, values, and preferences, working towards them with energy and persistence even in the face of adversity and challenges, and monitoring one's progress towards goal attainment, mastery and performance.

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3.6 Developmental Readiness

"…readiness is all" - Hamlet

Evident in the discussions above are the key roles that self-awareness, self-regulation, and self-motivation play in the developmental process. To reiterate, self-awareness is crucial to change and development (James, 2008; Bourner, 1996). Self-regulation and its interrelationship with self-awareness links the deeper levels involved in adult development to surface-level competency acquisition and leadership development (Day et al., 2009). As for self-motivation, it is at the basis of self-development, personal mastery orientation, learning goal orientation, and career growth orientation (Boyce et al., 2010). As suggested above, these three competencies are argued to constitute an individual's Developmental Readiness. This conceptualisation enhances the critical role of SA, SR, and SM in development, rather than just being forms of interpersonal competences associated with leader development as Day (2000) suggested.

Going back to the four competency areas discussed in chapter 2, i.e. the cognitive, social, emotional, and behavioural domains, it seems plausible to argue based on the literature that their essence is captured by these three meta-competencies self-awareness, self-motivation, and self-regulation. In a nutshell, cognitive competency includes sense-making, perspective-taking, information-processing, perceptions, awareness, and pattern recognition. Social competency involves social networking, power, influence, perception, interpretation, motivation, and communication. Emotional competency involves awareness, differentiation, prediction, empathy, gauging others' feelings and emotions, controlling emotional

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expression, and influencing others' emotions. Finally, behavioural competency includes differentiation, awareness, a behavioural repertoire, adaptability, and flexibility. On the other hand, self-awareness includes an accurate self-concept, meta-cognitive ability, higher-order processing, emotional interpretation, social awareness, behavioural awareness, and self-mastery. Cognitive complexity underlies self-awareness, and social, behavioural, and emotional complexity are incorporated into it (Avolio, 2004; Day & Lance, 2004). Self-regulation includes cognitive and evaluative mechanisms, motivational processes (prevention/promotion), and social and behavioural regulatory processes. Cognitions, affect, and behaviour all operate concurrently in shaping self-regulation (Lord et al., 2010) which happens within a social framework and entails social competency. Finally, self-motivation is based on cognitive appraisal, social stimuli, emotional components, and behavioural consequences. Self-motivation is inherently a cognitive and emotional process (Froman, 2010; Boyce et al., 2010), which cannot be separated from its social and behavioural aspects. Figure 3 summarizes the above visually.

Thus it can be seen that these three competencies cover the four competency areas. This is not to say that SA, SR, and SM are higher-order factors on which cognitive, social, emotional, and behavioural competencies load, but that they themselves are higher-level competencies that span and enhance skill and competency acquisition in the four areas.

What this research proposes is that they are precisely what constitute this propensity for leadership development, Developmental Readiness (DR). So DR comprises self-awareness, self-regulation, and self-motivation. These in turn each include cognitive, social, emotional, and behavioural aspects. DR is expected to help

Figure 3 - Self-awareness, self-regulation, and self-motivation as related to the 4 competency domains.
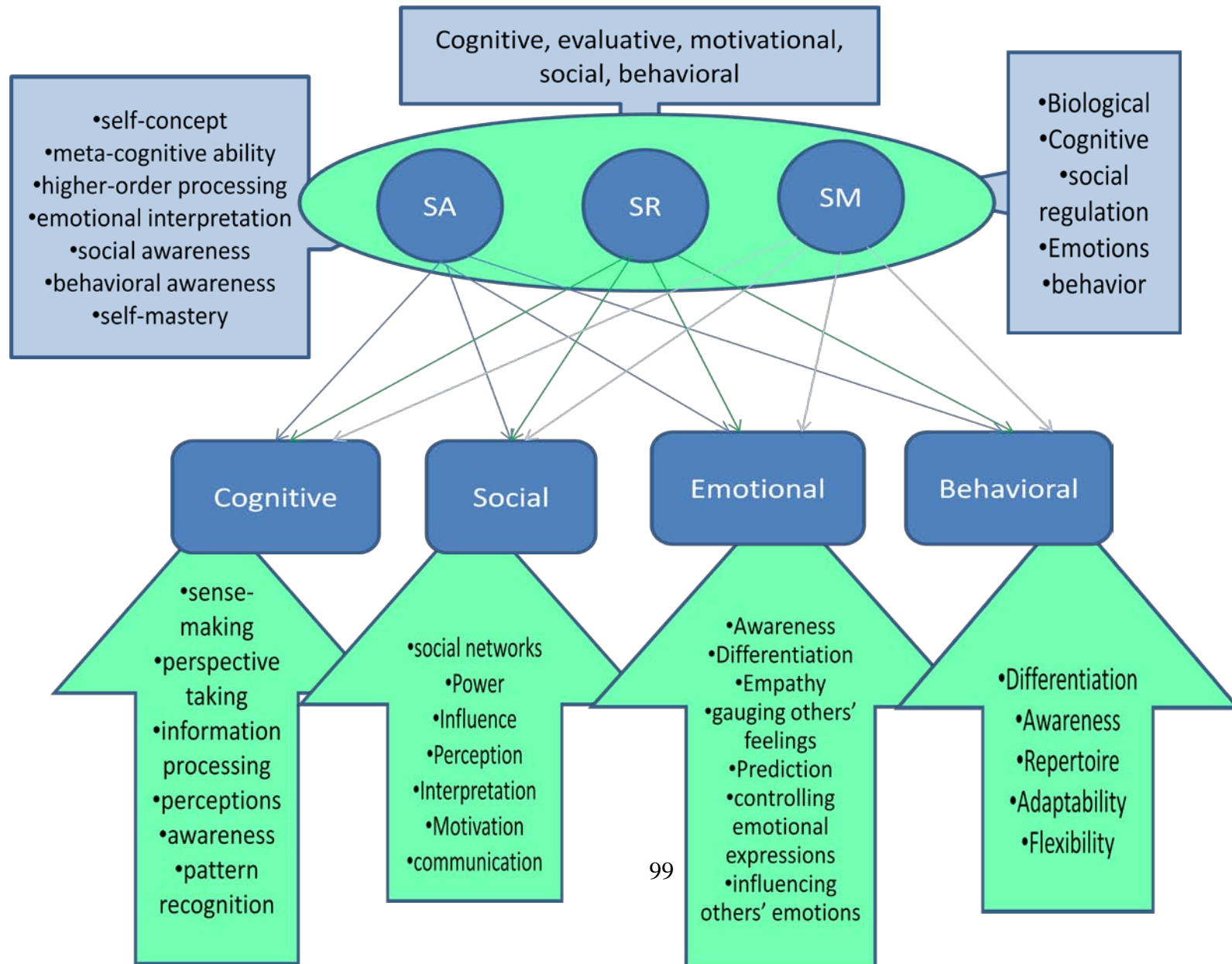
accelerate individuals' ability, and influence the development of leadership competencies. Depending on the individual, self-awareness, self-regulation, and self-motivation will be combined differently, thus resulting in individual differences in DR.

Developmental readiness is actually an extension of the notions of learner readiness (Holton, Bates, & Ruona, 2000), trainability (Noe & Schmitt, 1986), readiness and willingness to develop (Chappelow, 2004), and propensity for self-development (Boyce et al., 2010). It is basically how prepared a leader is to benefit from a developmental experience (Day et al., 2009). The concept of developmental readiness was first introduced by Avolio (1999, 2004) as a learning orientation, a function of how people view themselves, and based on a number of personal characteristics and experiences. It is related to self-efficacy, moral reasoning, critical evaluation, reflective capacity, and prior experience of development (trigger events). Hannah (2006), defined DR as "both the *ability* and *orientation* to attend to, make meaning of, and appropriate performance feedback information effectively and positively into one's self-concept; the ability to access and effectively process self-knowledge, and ultimately apply that knowledge during self-evaluation and the formation of efficacy beliefs". (pp. 65-66)

Developmental readiness was first conceptualised as consisting of three dimensions: meta-cognitive ability, self-concept clarity, and learning goal orientation, and self-complexity was suggested as a possible fourth dimension (Hannah, 2006). Further fine-tuning conceptualised DR as consisting of the following five factors: self-concept clarity or self-awareness; goal orientation and implicit theory of self;

meta-cognitive ability; self-complexity; and developmental efficacy (Avolio &
Hannah, 2008). Hannah and Lester (2009) defined it as "the ability and motivation to
attend to, make meaning of, and appropriate new knowledge into one's long term
memory structures."

Further research led to even more refinement, where DR became a function of
leaders' motivation and ability to develop (Hannah & Avolio, 2010). The definition
evolved as: "the ability and motivation to attend to, make meaning of, and appropriate
new leader KSAAs (knowledge, skills, abilities, and attributes) into knowledge
structures along with concomitant changes in identity to employ those KSAAs" (pp.
1182). Motivation to develop is evident through interest, goals, learning goal
orientation, and developmental efficacy, while ability to develop is manifested
through leaders' self-awareness, self-complexity, and meta-cognitive ability.

Now this present research's conceptualisation of DR having self-awareness,
self-regulation, and self-motivation as its basic underlying dimensions represents both
an integration of the above definitions as well as an important addition not explicit in
the definitions above, that of self-regulation. The dimensions included in Avolio and
Hannah's works are actually captured by the three meta-competencies self-awareness,
self-regulation, and self-motivation. Meta-cognitive ability underlies all three meta-
competencies, as stated above. Motivation to develop and its underlying factors
(learning goal orientation, interest, goals, and developmental efficacy) are captured
through self-motivation. Self-concept clarity, self-complexity, and implicit theory of
the self are captured through self-awareness. Furthermore, self-regulation adds
another dimension of control which is integral to the learning process, as can be

inferred from research on meta-cognition, self-regulation, and self-regulated learning (c.f. Dinsmore, Alexander, & Loughlin, 2008; Kaplan, 2008). Thus this research offers both a simpler conceptualisation of DR, as well as a tool to assess it, within the same theoretical and conceptual framework driving earlier research on the topic. DR is defined here as "individuals' potentiality for development or their propensity to learn and develop leadership, represented by the synergistic combination of their self-awareness, self-regulation, and self-motivation."

Developmental readiness has important practical and theoretical implications. It has been suggested to enhance self-explication capabilities and meaning-making (Hannah, 2006). It has also been suggested to help understand people's propensity for self-development, shifting the responsibility for learning to the individual (Boyce et al., 2010). According to Hannah and Avolio (2010), DR will help understand individual differences and variation in development. DR may also prove to be a key factor in accelerating development (Avolio & Hannah, 2008, 2009). Enhancing leaders' DR will enable them to develop more fully and even learn more effectively from their ongoing challenges in the situations they face. Organisations can evaluate employee readiness, making it a vital part of selection and developmental decisions, while also helping employees develop that readiness and propensity for self-development (Boyce et al., 2010), thus cutting developmental costs, time lags, and increasing return on investment.

Thus the importance of developmental readiness lies in its potentially far-reaching implications:

1. Where training providers are baffled by the vast inconsistency in learning outcomes and transfer of training, DR will help explain this variability observed in training and developmental outcomes across individuals;

2. Where programme design typically focuses on managerial and leadership competencies through the use of formal lecture or experiential methods, DR will help providers, be they trainers or universities, in the design and delivery of their programmes, by gearing the focus towards self-awareness, self-regulation, and self-motivation, these meta-competencies that will ensure longer-term learning and development. Thus DR would become the primary area targeted for development before leadership and management-specific interventions;

3. Where job and training selection decisions are often arbitrary or focus only on perceived high-flyers, DR will offer a tangible way for assessment that will inform and help policy makers in setting procedures for selection and development. Thus rather than base decisions only on past or present performance, DR will encourage HR and decision makers to select individuals based on their potentiality and propensity to develop and learn;

4. DR is also likely to instigate and introduce more efforts to develop that capacity to learn in individuals at early stages in their careers, even starting from high-school or undergraduate levels, also further encouraging organisations and individuals to seek and foster learning environments;

5. Theoretically, the question of how we can get individuals to be more ready to develop should take precedence over questions concerning the mechanisms of leadership development;

6. Finally, as an added benefit, a focus on DR as a precursor to development will hopefully lessen the lag between investment and return on investment, where the latter is of primary concern to organisations in these turbulent economic times.

3.6.1 Developmental Readiness and Leadership Development

Now many developmental opportunities are available for individuals. Over the course of their careers and lifetimes, people tend to develop work-related, managerial, and leadership competencies anyway, drawing from experiences and challenges faced on-the-job and as a result of their particular life circumstances, extra-curricular activities, and the roles that they play (Gray & Mabey, 2005). Thus a natural learning curve already exists. On the other hand, many individuals are also offered the opportunity to attend developmental programmes within their organisations, and others choose to pursue formal higher education as part of their personal development.

In terms of developmental programmes, the trend in leadership and management development (discussed in chapter 2) seems to be a use of interventions such as 360-degree feedback, executive coaching, mentoring, networking, challenging job assignments and rotation, and action learning, classroom training, and team-based initiatives, as well as experiential exercises (Day, 2000; Hernez-Broome & Hughes, 2004). Worth remembering is the fact that leadership development is an ongoing

process, grounded in individual personal development. It is never complete, is embedded in experience, but, it is facilitated and enhanced by rich developmental interventions (Van Velsor & McCauley, 2004).

There is some variance, though, in the extent of learning and development that individuals actually acquire over their life/career-span, and in the outcomes incurred from formal developmental initiatives (Avolio et al., 2009). Programme design and delivery notwithstanding, this is due to various individual differences, some inherited and others acquired. Some of these include personality dispositions, learning orientation, need motivation, performance orientation, environmental support, malleability, mental models, propensity for development, confidence, motivation, self-concept, and awareness (Day et al., 2009; Avolio, 2004). One other individual difference that is likely to explain this variance in development and competencies acquired may be developmental readiness itself. DR is likely to help explain (over and above other predictors) why different individuals who follow the same or similar career tracks exhibit different competency levels and developmental trajectories.

Now previous research has already suggested that level of ability or level of entry into training may indeed have an effect on learning outcomes incurred (Bell & Kozlowski, 2008). Aguinis and Kraiger (2009) found evidence that meta-cognitive activities and self-regulatory processes mediate between training and learning. Boyce et al. (2010) suggested that motivation and skills mediate the relationship between dispositional attributes and propensity for self-development. Some DR variables were found to moderate levels of development in transformational, authentic leadership and leadership self-efficacy (Hannah & Avolio, 2007). And finally, goal orientation, self-efficacy, self-awareness, self-regulatory strength, implementation intentions, and

motivation to lead were suggested to moderate the developmental process from novice to expert (Day et al., 2009).

Thus when people have countless (often daily) formal and informal developmental opportunities available, when they have the desire to develop and change (self-motivation), the ability to exert control over oneself (self-regulation), and the understanding of what needs to be changed (self-awareness) – i.e., when they have a certain degree of developmental readiness, then this is likely to have a significant effect on their developmental trajectories. Thus we propose here that people with high levels of developmental readiness, who are offered the opportunity to develop through some stimulus such as a developmental programme that helps reframe their understanding and knowledge as well as build their capabilities and competencies, will incur more development and change in competencies than people who have lower levels of developmental readiness through a moderating and accelerating process. Therefore the hypothesis:

> *Hypothesis 3: Developmental Readiness will moderate the relationship between developmental interventions and leadership development outcomes (change in competencies) such that the higher the level of DR, the greater the change incurred (figure 4).*

Figure 4 - The Moderating role of Developmental Readiness.
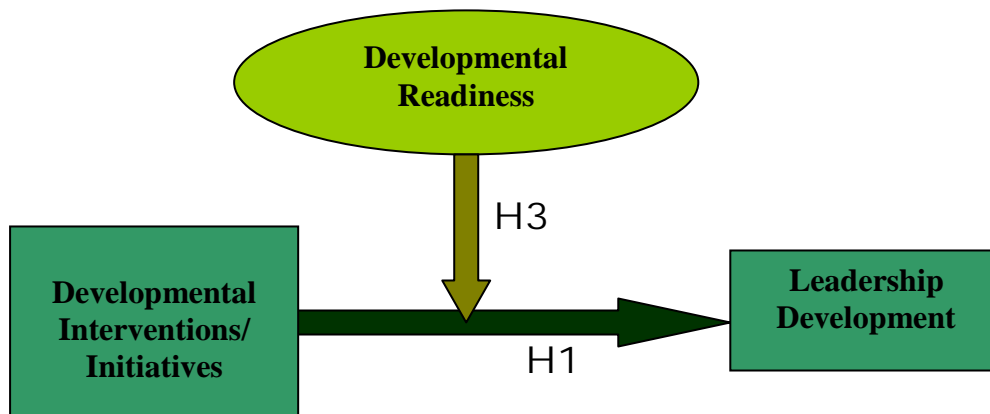
3.7 Chapter Summary

In this chapter a discussion of self-awareness, self-regulation, and self-motivation was presented. These three are meta-competencies that have been highlighted as key to learning and development in the leadership development literature. These were suggested to form the basis of individuals' propensity for leadership development, Developmental Readiness.

The construct of developmental readiness was traced through its development in the literature, and a definition and conceptualisation was presented here that both builds on and encompasses previous work and adds a new element and simpler structure to earlier work. The potential practical and theoretical implications of DR were discussed, and its role in the developmental process highlighted. DR was hypothesised to moderate the developmental process, affecting the rate at which development and change in competencies occur.

The importance of developmental readiness in the developmental process has been highlighted in this chapter. A question arises, though: what individual characteristics might predict DR? We have discussed the fact that self-awareness,

self-regulation, and self-motivation can be developed in individuals. It follows, then, that DR can be developed. But are there any individual characteristics that influence an individual's developmental readiness, which may even help predict it? Two possible arenas for exploration may be personality dispositions and individual values. Personality has been linked to various constructs in the literature, among them learning and developmental aspects. On the other hand, values are important drivers that affect life choices and orientations. The next chapter will explore the personality and values literature as related to developmental readiness.

CHAPTER 4: PERSONALITY DISPOSITIONS AND INDIVIDUAL VALUES

4.1 Chapter Overview

This chapter explores possible precursors of Developmental Readiness. Of the many individual differences explored in the literature, personality dispositions and individual values are suggested to directly predict Developmental Readiness. First, an overview of personality is presented, as well as suggestions as to how personality dispositions relate to Developmental Readiness and hypotheses depicting their relationships. A discussion of individual values follows, also focusing on how individual values can inform our understanding of Developmental Readiness. Next, the relationship of personality and developmental readiness to competencies is explored, and developmental readiness is suggested to mediate the relationship between personality and competencies. Finally, differences between students and executives following from chapter 2 are discussed.

4.2 Individual Differences and Precursors to Developmental Readiness

Individual differences have important consequences, and are pivotal in explaining many social adaptive problems and situations. Buss (2009) suggested an evolutionary psychology approach, looking at various theories to help explain individual differences. These can all be drawn upon, each offering a different and complementary perspective from which to understand individual differences. Moreover, individual differences have always been of interest in the explanation of diverse phenomena, including learning, leadership, performance, effectiveness, and others. Differences such as career paths, tenure, years of experience, age, position, success and failure history, exposure to complex situations, scope of work, as well as cultural variables affect interpretive and cognitive skills, complexity, motivation,

awareness, and many other domains. Work and life experience change people's category systems, processing abilities, and thus performance and other outcomes (Walsh, 1995).

Other individual differences are also highlighted in the literature, some inherited and others acquired. Some of these include personality dispositions, IQ, learning orientation, need motivation, performance orientation, environmental support, malleability, mental models, propensity for development, confidence, motivation, self-concept, and awareness (Day et al., 2009; Avolio, 2004). Acquisition of learning, empathy, emotional expression, cognitions, abilities, skills, and capabilities, competence and competency, behaviour, motivation, intelligence, interests, values, self-concept, self-efficacy, self-esteem, have been studied as individual differences that affect various processes.

It could be argued that there are also individual differences in the ability and propensity to develop leadership, i.e. in their developmental readiness. There should be something about the individual that influences this readiness that can be measured and explained. Two areas in particular that may be relevant to the study and understanding of developmental readiness may be personality and values since they explain individual differences and tendencies and may well play a role in developmental processes.

First, the personality literature seems to point to personality types or dispositions in individuals as predictors of and explanation for individual differences in many different areas (McAdams & Pals, 2006). Personality also has been posited to affect the way individuals behave and make choices (Hogan & Kaiser, 2005; McCrae

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& Costa, 1999). Thus one would also expect personality to help explain eagerness, ability, and willingness to reflect on oneself, change, develop, and learn; i.e., to help explain individual differences concerning developmental readiness and the developmental process.

On the other hand, individual values also seem to account for many differences between individuals, especially regarding life and work choices, behaviour, attitudes, and orientation (Rokeach, 1973; Rohan, 2000). Since they serve as guiding principles (Rohan, 2000), and reflect different orientations and priorities (Gallagher, 2001; Schwartz, 1994) towards most life experiences, including those relevant to learning and development, then they would also be expected to help explain developmental readiness.

In this chapter the link is drawn between personality dispositions, individual values and developmental readiness. A better understanding of personality variables and individual values is suggested to lead to a better understanding of the type of people who have enhanced learning and developmental potentiality, i.e. developmental readiness.

4.3 Personality

Personality is the general psychology of individual differences (Wiggins, 1996). It has been defined as "the complex organisation of cognition, affects, and behaviours that gives direction and pattern (coherence) to the person's life" (Pervin, 1996, p. 414), and as "an individual's characteristic patterns of thought, emotion, and behaviour, together with the psychological mechanisms – hidden or not – behind those patterns" (Funder, 1997, p.1). Personality, according to McAdams and Pals

(2006), is an individual's variation with respect to humans' general evolutionary design. It is influenced and further shaped by dispositional traits, characteristic adaptations, life narratives, and cultural context. Personality refers to unique patterns of traits (somatic, motivational, aptitudes, and temperaments). Personality is complex due to its being subject to various different influences. These may be biological, social, or cultural (Winter & Barenbaum, 1999).

Key in personality psychology are individual differences. In fact, the identification and explanation of these differences is one of its main missions as a field (Buss, 1999). Individual differences may be inherited but may also be due to non-heritable factors. When individuals encounter certain situations over a long period of time, these individual adaptations become enduring. Thus social context must be taken into account when explaining individual differences and solving adaptive problems (Winter & Barenbaum, 1999; Buss, 1999). Taking a social adaptive perspective, personality differences can be explained as different strategies or reaction norms for solving recurrent adaptive problems (Buss, 2009; Buss 1996, Denissen & Penke, 2008a; 2008b). A comprehensive view would be to conceptualise personality as strategic differences and the environment as different salient adaptive problems (Buss, 2009).

Kluckhohn and Murray (1953) suggested that all people are like all others, like some others, and like no other. Personality psychology attempts to explain how and why that is, since, according to McAdams and Pals (2006), its mission should be to offer a wide and integrative framework within which to understand the whole person (i.e. species characteristics, individual characteristics, and unique shaping by unique life experiences). In addition, theories of personality help in understanding human

behaviour, by looking at internal cognitive and emotional processes and how these determine what people do (Gulliford, 1992).

Funder (2009) suggested that personality psychology (theory and research) be reorganised in terms of persons, behaviours, and situations. This is because behaviour can best be understood in terms of who performs it as well as the context or circumstances under which it is performed. Mischel (2009), on the other hand, argued that understanding personality requires understanding how situations are interpreted and social information processed by people. This processing generates characteristic patterns of interactions with situations.

Personality seems to undergo changes, especially at early ages and through young adulthood. The age of thirty seems to be the threshold age where-after relative stability is observed, although some authors have argued otherwise (interested readers can refer to McCrae & Costa, 1999; Costa & McCrae, 2002; Roberts, Walton, & Viechtbauer, 2006a; Costa & McCrae, 2006; Roberts, Walton, & Viechtbauer 2006b; van den Berg & Feij, 2003 for a discussion on the matter).

4.3.1 The Five-Factor Theory of Personality

One of the most prominent theories of personality is the Five-Factor Theory personality system developed by McCrae and Costa. The FFT holds four assumptions about human nature: knowability, rationality, variability, and proactivity (McCrae & Costa, 1996, 1999). *Knowability* means that personality is a proper object of scientific study in its many forms and objects, *rationality* assumes that people have the capability of understanding themselves and others (how irritable or sociable they are, for example), *variability* assumes individual differences, and *proactivity* assumes that

people are not passive victims but rather proactive shapers of their lives, where personality is one active element involved in this process (McCrae & Costa, 1999).

The Five-Factor Theory is built on the Five Factor Model of personality (FFM), a model that has been of great utility, integrating diverse concepts and measures (McCrae & Costa, 1999), and a model of reference in personality research (Rolland, 2002). According to the FFM, five personality factors account for most variations in human behaviour – these are Extraversion, Agreeableness, Openness to Experience, Conscientiousness, and Neuroticism (Paunonen & Nicol, 2001). These have been called the "Big Five" personality dimensions and are summarised in table 1 below.

The Big Five taxonomy does not represent a certain theoretical dimension, but rather integrates diverse personality descriptions and systems into one common framework, based on extensive analyses of terms and ways in which people describe themselves and others (John & Srivastava, 1999). Personality is portrayed as a system, whose core components are basic tendencies (the five factors), characteristic adaptations, and the self-concept. This system interacts with other adjacent systems through biological bases, external influences, and objective biography. Interactions within the system and between systems are dynamic (McCrae & Costa, 1996, 1999). The FFT distinguishes between abstract psychological components (tendencies) and their concrete manifestations (adaptations). Traits cannot be equated with behaviour since they are deep-seated and only partly inferred from behaviour (McCrae & Costa, 1999). The FFT describes the interaction of biology and culture in the development of individuals' habits, values, attitudes, roles, and relationships. These express both

individual traits and the effects of the external environment (McCrae & Costa 1996, 1999).

Table 1 - Big Five Factors

Big Five Factor	Description
Extraversion	• Tendency to be warm, gregarious, assertive, sociable, talkative, and active • Tendency to actively pursue excitement, novelty, pleasurable experience, and challenge • Drives social skills, motivation to seek social situations • Reward value of social interactions
Agreeableness	• Tendency to be trusting and trustworthy, straightforward, and altruistic • Tendency to be good-natured, compliant, modest, gentle, and cooperative • Disposition to react cooperatively in resource conflicts
Conscientiousness	• Competence, orderliness, dutifulness, carefulness, thoroughness, responsibility, organisation, and scrupulousness • Tenacity of goal pursuit in the face of distracting circumstances
Neuroticism	• Tendency to be anxious, angry, hostile, insecure, and depressed. • Emotional instability • Sensitivity to signs of social exclusion
Openness to Experience	• Tendency to be intellectual, imaginative, sensitive, and open-minded, to appreciate fantasy and aesthetics, and rely on feelings • Reward value of cognitive activity

Sources: McCrae & Costa, 1996, 1999; Roccas, Sagiv, Schwartz, & Knafo, 2002; Boyatzis, Goleman, & Rhee, 2000; Denissen & Penke, 2008a

Personality is conceptualised as having a formal hierarchical structure (Eysenck, 1947). The Big Five taxonomy represents personality at a high and abstract level. Each of these dimensions includes a very broad range of characteristics (John &

Srivastava, 1999). A second level above the Big Five (the Big Two) has also been confirmed, as well a higher-order General Factor of Personality (GFP) (Rushton & Irwing, 2008; 2009; Musek, 2007; Erdle, Irwing, Rushton, & Park, 2010). The Big Two factors are Alpha (Neuroticism/Emotional Stability, Conscientiousness, and Agreeableness) and Beta (Extraversion and Openness to Experience) (Rushton & Irwing, 2008). The GFP or Big One was interpreted by Musek (2007) as a basic personality disposition with deep biological, evolutionary, genetic, and neurophysiological roots, integrating the most general dimensions of personality (non-cognitive). Rushton and Irwing (2009) and Rushton, Bons, and Hur (2008) considered the GFP from an evolutionary life-history and natural selection perspective.

Viewing and measuring personality at such a high level inherently loses sight of some of the lower-level relationships and variances, and thus may result in attenuated empirical accuracy in prediction and understanding of personality-behaviour associations. Paunonen and Nicol (2001) advised against the use of such broad aggregates. Instead, they recommended a multiple regression of separate assessments, thus providing more predictive (more accuracy) and explanatory (better understanding) advantage. Rushton and colleagues (Rushton & Irwing, 2009; Rushton et al., 2008) argued, though, that the presence of the GFP and the Big Two does not invalidate the lower-order factors (Big Five or lower-order facets thereof). Instead, they stressed the importance of considering which level to use on empirical and practical bases, since each level is appropriate for different types of predictions and questions. In summary, then, personality may be conceptualised and operationalised at different higher or lower order levels, depending on the level of detail appropriate for each particular study and its purposes.

Despite its popularity, the FFM has been criticised at different levels. One of those is its being too descriptive to provide a theoretical model. In response to this, Denissen and Penke (2008a) conceptualised the FFM as "stable individual differences in people's motivational reactions to circumscribed classes of environmental stimuli" (p. 1286). This conceptualisation, in their opinion, explicitly recognises traits as giving rise to behaviour that satisfies certain needs through their interaction with environmental features. Specifically, after reviewing different conceptualisations of the FFM dimensions, extraversion was conceptualised as the reward value of social interactions, agreeableness as a disposition to react cooperatively (vs. selfishly) in resource conflicts, conscientiousness as the tenacity of goal pursuit in the face of distracting circumstances, neuroticism/emotional stability as differences in the sensitivity to signs of social exclusion, and openness to experience/intellect/culture as the reward value of cognitive activity.

The Big Five taxonomy is in fact not adopted by all researchers. But even though it might not be a complete system, it still allows for comparisons and provides a conceptual and integrative framework for personality research (John & Srivastava, 1999). The FFT may not necessarily provide a means of predicting behaviour, but would definitely help understand it and its drivers (McCrae & Costa, 1996, 1999). It inherently has its strengths and weaknesses as do most theories. Since the purpose of this research is to establish the relationship between personality dispositions and developmental readiness, and not for example, actual observed behaviour or other constructs, the FFT seems to provide just the level of detail appropriate for this research.

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Organisational and social psychologists have recognised the role of personality in determining leadership and work behaviour (e.g. Paunonen & Nicol, 2001; Judge, Bono, Ilies, & Gerhardt, 2002; Hogan & Hogan, 2002; Lord, De Vader, & Alliger, 1986). Hogan and Kaiser (2005) reviewed the literature on personality and leadership and proposed a model whereby personality predicts leadership style ("who we are determines how we lead" (p.175)). In a meta-analytic review of the literature, Judge et al. (2002) found overall correlations between each of the Big Five factors and the five-factor model and leadership. Judge and Bono (2000) found that only Extraversion and Agreeableness positively predicted transformational leadership, and Extraversion was found to have the strongest and most consistent relationship to transformational leadership in another study by Bono and Judge (2004). Dalton and Ernst (2004) also found that all five factors relate to different aspects of global leadership.

Personality has also been linked to other outcomes using the different levels. Wang and Erdheim (2007) and Bipp, Steinmayr, and Spinath (2008) both found significant correlations between personality and goal orientation. Hough and Oswald (2008) found evidence linking personality to major life outcomes (mortality, divorce, and occupational attainment), performance (job, task, training, learning, skill acquisition, managerial effectiveness, leadership, etc…), team performance, job satisfaction, as well as counterproductive work behaviours. Personality has also been linked to academic performance/achievement (O'Conner & Paunonen, 2007; Laidra, Pullmann, & Allik, 2007; Chamorro-Premuzic & Furnham, 2008). It also seems to influence the way people perceive others (Knyazev, Bocharov, Slobodskaya, & Ryabichenko, 2008). Furthermore, studies seem to indicate that organisational success

and failure depends on top leader personalities (Havaleschka, 1999) and that

leadership self-efficacy mediates the relationship between personality and leader

effectiveness across different levels of job demands and job autonomy (Ng, Ang, &

Chan 2008).

On the other hand, self-motivation, self-regulation, and self-awareness have

also been directly linked to personality dispositions. Personality traits or dispositions

have been posited to play an accelerating or inhibiting role in cognitive and

motivational processing (Bucker & Poutsma, 2010). According to Akrami, Hedlund,

and Ekehammar (2007), a person's personality characteristics are constructed by self-

schemas which are cognitive-affective structures, and self-relevant information is

processed faster when people are high or low on certain personality dispositions.

Neuroticism has been linked to emotional self-absorption and to inaccurate self-

assessment (Renn, Allen, Fedor, & Davis, 2005). Agreeableness has been linked to

social awareness (Boyatzis et al., 2000). Different personality factors have also been

found to be related to self-concept clarity (Campbell, Trapnell, Heine, & Katz, 1996).

The above provide evidence to the link between self-awareness and personality, since

self-awareness includes these constructs. Moreover, personality is highly linked to

motivational and self-regulatory mechanisms (Hough & Oswald, 2008), and some

personality dispositions have been found to correlate with intrinsic motivation, and

deep learning (Chamorro-Premuzic & Furnham, 2008). For example,

Conscientiousness and Neuroticism were linked to self-motivation and self-regulation

(Barrick & Mount, 1991; Judge & Ilies, 2002; Hoyle 2006; Renn et al., 2005; Back,

Schmukle, & Egloff 2009). Agreeableness was also found to be linked to motivation

(Steel, 2007; Judge & Ilies, 2002). Each personality factor's specific connections with

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these facets of developmental readiness (self-awareness, self-motivation, and self-regulation) will be discussed in more detail subsequently.

The above discussion provides evidence that clear links have been found to each of self-awareness, self-motivation, and self-regulation, thus providing a firm basis for expecting a direct relationship between personality dispositions and developmental readiness. It is argued here that personality will play a predictive role in explaining individual differences in developmental readiness. The following general hypothesis follows (see figure 5):

Hypothesis 4: Personality dispositions will predict Developmental Readiness.

Figure 5 - The relationship between Personality Dispositions and Developmental Readiness.
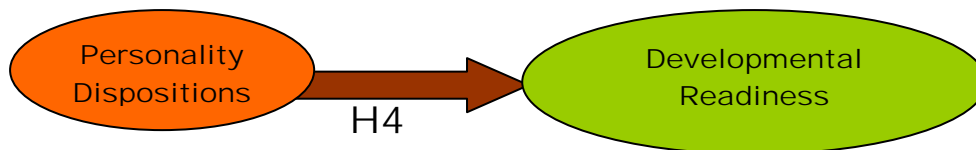
Personality dispositions are depicted here by the Big Five constructs. These are high-level and abstract constructs, and this study chose to deal with personality at that level. Personality dispositions or traits refer to what people are like, rather than what they do. A look at each of these five constructs is now taken in turn, with specific links to developmental readiness discussed and hypotheses proposed.

4.3.1.1 Neuroticism

Neuroticism reflects emotional instability. It is the person's tendency to be anxious, angry, hostile, insecure, self-conscious, impulsive, and depressed (Costa & McCrae, 1992). Individuals low on Neuroticism are calmer, more poised, and emotionally stable (McCrae & Costa, 1996; Roccas et al., 2002). Individuals high on

neuroticism tend not to have attained desired levels of any values, the latter possibly being the cause of high neuroticism (Bilsky & Schwartz, 1994).

Neurotic individuals avoid setting goals, and their anxiety and other negative emotions may hinder motivation and performance (Judge & Ilies, 2002) as well as successful self-regulation (Renn et al., 2005; Steel, 2007). On the other hand, though, some aspects of Neuroticism (guilt, dissatisfaction) may prompt self-improvement and thus motivation to develop (Bandura, 1991), while other aspects (impulsiveness, fear, anger) may elicit self-destructive behaviours (Baumeister & Scher, 1988) and thus would be negatively related to self-regulation and motivation. The same pattern of contradictory associations may also be found with self-awareness where Neuroticism is negatively associated with self-absorption, self-assessment (Renn et al., 2005), and self-concept clarity (Campbell et al., 1996) and positively associated with self-consciousness (McCrae & John, 1992). Neuroticism was also found to be associated with self-management failure (Renn, Allen, & Huning, 2009). Low Neuroticism was also posited to enable much faster monitoring, interpretation, and action (Bucker & Poutsma, 2010).

Control Theory (Carver & Scheier, 1998) suggests that for growth to occur, some discrepancy must be observed between the current and desired states, making the individual uncomfortable, thus triggering self-regulatory and motivational processes. It seems that individuals very low on Neuroticism tend to be resilient and gain no negative emotionality from stimulus or a perceived discrepancy. On the other hand, very high Neuroticism individuals tend to become trapped in and paralysed by their never-ending cycle of anger and negative emotionality, so as not be able to focus

on development. Furthermore, a study by Tamir (2005) found that people high on Neuroticism were likely to choose to experience some negative emotionality such as worry or anxiety, if faced with highly challenging situations. She also found that this proved beneficial to performance. Overall, though, the effect of Neuroticism tends to be negative rather than positive (Matthews & Zeidner, 2004).

Given the above, two scenarios are possible: (1) Neuroticism may have a curvilinear relationship with DR, where individuals very high and very low (on both extremes) on Neuroticism will be expected to have low DR levels, and mid-range Neuroticism will be expected to have higher DR levels. Thus the hypothesis:

Hypothesis 4a(i): Neuroticism will have a curvilinear relationship with DR such that mid-level Neuroticism will be positively associated with DR, and high/low Neuroticism negatively associated with DR.

On the other hand, and perhaps more plausible (or more consistent with previous research), is scenario (2) where Neuroticism has a negative relationship with DR, i.e. individuals high on Neuroticism will have lower DR levels and vice versa. Thus the hypothesis:

Hypothesis 4a(ii): Neuroticism will be negatively associated with DR such that the higher the Neuroticism level, the lower the DR of an individual.

4.3.1.2 Extraversion

Extraversion is an individual's tendency to be warm, gregarious, assertive, sociable, talkative, and active as opposed to the tendency to be retiring, reserved, and cautious (low Extraversion). High Extraversion individuals tend to actively pursue

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excitement, novelty, pleasurable experience, and challenge (McCrae & Costa, 1996; Roccas et al., 2002). They seem to be expressive and seek contact (Back et al., 2009). Although some moderate associations have been found between Extraversion and self-concept clarity (Campbell et al., 1996), no significant associations have been found between Extraversion and the DR factors. Extraversion tends to drive social skills (Boyatzis et al., 2000), where extraverted individuals are highly motivated to seek social situations. This may stem from a need for affiliation (Steel & Konig, 2006). Extraversion is not expected to have any direct relationship with developmental readiness since both extroverts and introverts may be equally motivated (or not) to change and develop, may equally be self-aware, and may equally have a high or low degree of self-regulation. Consequently:

Hypothesis 4b: Extraversion will not be significantly associated with DR.

4.3.1.3 Openness to Experience

An individual who is Open to Experience is usually intellectual, imaginative, sensitive, and open-minded, appreciates fantasy and aesthetics, and relies on feelings as opposed to down-to-earth, insensitive, and conventional ones (low Openness to Experience) (McCrae & Costa, 1996; Roccas et al., 2002). Openness to Experience also indicates a certain proclivity towards situations that offer the opportunity to display innovation and knowledge, and is reflected by intellectual competence, a willingness to encounter new and challenging situations, and innovative ideas (Back et al., 2009). Correlations have been found between Openness to Experience and training proficiency (Barrick & Mount, 1991), since attitude and readiness are key to training success, and people who are open to experience enjoy trying out novel experiences. Openness to experience has also been shown to drive goal and action

management as well as self-management (Boyatzis et al., 2000). These are indicative of a relationship between Openness to Experience and self-motivation. On the other hand, Openness to Experience does not seem to be strongly tied to self-awareness and self-regulation or related constructs in the literature (c.f. Campbell et al., 1996; Steel, 2007). Bucker and Poutsma (2010) posited, though, that Openness to Experience enables faster monitoring, interpretation, and adjustment, indicative of self-awareness (monitoring and interpretation) and self-regulation (adjustment) to a certain extent. Therefore Openness to Experience is expected to be positively related to developmental readiness. One might expect a weaker relationship than the other factors with DR because of seemingly weaker evidence linking it to self-awareness and self-regulation in the literature, though the intuitive expectation would be a strong relationship since it is directly related to the concept of readiness and willingness to learn. Thus the hypothesis:

> *Hypothesis 4c: Openness to Experience will be positively associated with*
> *DR.*

4.3.1.4 Agreeableness

Agreeableness is the tendency to be trusting and trustworthy, straightforward, and altruistic (McCrae & Costa, 1996). Agreeable individuals are good-natured, compliant, modest, gentle, and cooperative, as opposed to disagreeable ones who tend to be irritable, ruthless, suspicious, and inflexible (Roccas et al., 2002). Agreeableness is indicative of a tendency to minimise interpersonal conflict, where others' interests seem to be as salient as one's own interests (Back et al., 2009).

Agreeableness is expected to be directly linked to self-regulation and self-awareness, since agreeable people tend to self-monitor and regulate their behaviour out of concern for the welfare of others, and should also possess a certain degree of self-awareness since they are able to gauge the impact of their attitudes and behaviours, both verbal and non-verbal, on others. Agreeableness has been linked to self-concept clarity (Campbell et al., 1996) and social awareness (Boyatzis et al., 2000), both aspects of self-awareness. Low Agreeableness has been linked to procrastination, indicative of low motivation, and to self-regulatory failure (Steel, 2007). Thus high Agreeableness would be expected to be positively related to self-motivation and self-regulation. Consequently, Agreeableness is expected to directly influence developmental readiness.

Hypothesis 4d: Agreeableness will be positively associated with DR.

4.3.1.5 Conscientiousness

Conscientiousness is associated with competence, orderliness, dutifulness, carefulness, thoroughness, responsibility, organisation, and scrupulousness (McCrae & Costa, 1996; Roccas et al., 2002). Low Conscientiousness people tend to be irresponsible and disorganised, spontaneous and distractible, unable to delay gratification, and more prone to procrastination (Costa & McCrae, 1992; Renn et al., 2005). Conscientiousness has two aspects, a proactive and an inhibitive one (McCrae & John, 1992). The proactive aspect (deliberation, planning, achievement striving; Costa & McCrae, 1992) holds a motivational element, the ambition and will to achieve, while the inhibitive one (order, self-discipline, dutifulness; Costa & McCrae, 1992) holds a regulatory element. Conscientiousness is indicative of the ways in which behaviour is managed, and its underlying facets are characteristic of successful

self-regulation (Hoyle, 2006). It is also indicative of a need for achievement (Steel & Konig, 2006). Conscientiousness is significantly tied to how likely the person will take responsibility to learn and apply that learning, how likely that person will respond to feedback and be persistent in trying to change (Van Velsor, Moxley, & Bunker, 2004). Highly conscientious individuals also show greater and longer persistence and perseverance than their low Conscientiousness counterparts, and are generally harder-working (Yeo & Neal, 2008). Conscientiousness seems to drive goal and action management (Boyatzis et al., 2000). It has also been linked both positively (high Conscientiousness) and negatively (low Conscientiousness) to self-regulation (Hoyle, 2006; Renn et al., 2005), to higher motivation and need for achievement (Barrick & Mount, 1991; Judge & Ilies, 2002; Steel & Konig, 2006), more self-concept clarity or self-awareness (Campbell et al., 1996), faster skill acquisition rates (Yeo & Neal, 2008), and generally more efficient self-management practices (Renn et al., 2009). Thus a positive association between Conscientiousness and DR is expected. The hypothesis follows:

Hypothesis 4e: Conscientiousness will be positively associated with DR.

In summary, four of the Big Five factors of personality are expected to influence developmental readiness either positively or negatively. This study proposes that this link between personality and the *learning of* or *readiness to learn* leadership may have important and sustainable long-term implications for practice. A discussion of individual values and their associations with developmental readiness now follows.

4.4 Individual Values

According to Rokeach (1973), values are beliefs, referring to modes of conduct or end-states of existence. They are preferences, or "conceptions of the preferable". Values are integrated (in relative order of priority) into an organised system, stable enough but witnessing some rearrangement due to changes in society, culture, and personal experience. Individual values are a result of intellectual development, degree of internalisation of values, identification with sex roles, political identification, and religious upbringing and beliefs.

Values are cognitive representations of three universal human requirements: biologically based needs, social interaction requirements for interpersonal coordination, and social institutional demands for group welfare and survival (Schwartz, 1994). Individuals must recognise, think about, and plan responses to all three. Values are central to human thought, emotions, and behaviour. They are cross-culturally relevant and valid, and allow for both between- and within-group comparisons (Hills, 2002).

A value is an individual's concept of a trans-situational goal that can be terminal or instrumental. This goal expresses interests (individualistic, collectivistic, or both) concerned with a motivational domain. These include enjoyment, achievement, self-direction, maturity, security, prosocial, restrictive conformity, and social power, and are evaluated on a range of importance (from very important to unimportant) as a guiding principle in the individual's life (Schwartz & Bilsky, 1987). Put more simply, values are desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity (Schwartz, 1994). Values motivate action, serve as standards, serve the interests of the social

entity, and are acquired through socialisation and unique learning experiences. They are distinguished by the types of motivational goals they express.

Kluckhohn and Strodtbeck (1961) proposed that cultures can be distinguished based on how they addressed five common human concerns: human nature, man-nature relationship, time sense, activity, and social relations. Cultures can respond to these problems in at least three ways, all expressed by every culture, but with differing rankings. The different rank orders give each culture its character. These responses are called "value orientations". Fundamental aspects of our lives (such as leadership, decision making, communication, and motivation) are shaped by these value orientations (Gallagher, 2001).

Cultural values represent the shared ideas and are the bases for specific norms about what is appropriate or not. Since they are shared they can be used to justify or condemn behaviour (Schwartz, 1999). According to Schwartz, individual value priorities are a product of both shared culture and unique personal life experience.

The structure of values refers to their conceptual organisation on the basis of their similarities and differences, and to the relations among value domains on the basis of their compatibilities and contradictions (Schwartz & Bilsky, 1987). Schwartz (1994) derived a comprehensive set of value contents and specified a dynamic structure of relations among them, drawing conclusions on their universality (content and structure) and their "basic-ness" to the human nature and condition. He built these on Rokeach's (1973) conceptualisation of values and methodology. Schwartz derived four higher-order value types and their organisation (Self-Transcendence vs. Self-Enhancement, Openness to Change vs. Conservation) and found them to be nearly

universal across cultures. In addition, ten value types were found to be nearly universally recognisable, along with their patterns of arrangement. These value types are: Power, Achievement, Hedonism, Stimulation, Self-Direction, Universalism, Benevolence, Tradition, Conformity, and Security. They are arranged in a circular pattern, reflecting some that are opposed to, and others that are compatible with each other. This structure enables researchers to relate value priorities as a whole system to other variables in cross-cultural studies rather than treat values as independent. (Schwartz, 1994)

Value systems are stable and meaning producing cognitive structures that portray the relative ordering of beliefs, desirable end-states and behaviours, and guides. All attitudinal and behavioural decisions can be traceable to personal value priorities (Rohan, 2000). According to Roe and Ester (1999), values influence activity indirectly through attitudes and goals (individuals), and through norms and shared goals (societies). They are a source of motivation and guidance for action. General values are more direct determinants of behaviour. They impact behaviour at work, and contribute to positive work outcomes (Roe & Ester, 1999). Value congruence may help reduce conflict and improve cooperation. Values are relatively stable, and are reinforced by daily practices and peer influence rather than changed by outside interventions.

Rokeach (1985) investigated the possibility of inducing change and/or stability in value priorities, belief systems, and personality structures. He suggested that if it may be possible to induce change, then would it not be possible to also induce stability in structures? To do so, he suggests working on assisting people in finding out their value priorities through self-confrontation, which would then be expected to

activate either a process of change where dissatisfaction is experienced, or reinforcement and reintegration of beliefs (increased stability) where satisfaction is experienced.

Some personal (individual) values are material or instrumental in nature and have concrete practical consequences, while others are affective or cognitive. Each set of values is relevant to a certain area of life (Sagie & Elizur, 1996). Some values drive the individual to continuous improvement, such as respect, responsibility, empathy, trust, openness, and cooperation (Jabnoun, 2001). Certain values have also been linked to certain leadership styles or behaviour. For example, Sarros and Santora (2001) found that executives who value fundamental human virtues and personal/professional development usually display transformational leadership styles and behaviours. Moreover, Szabo et al. (2001) found that when leadership behaviour is grounded in values, stability is more likely; yet this may also depend on situational factors.

In summary, values influence cognitive, affective, and behavioural responses (Rohan, 2000; Lord & Brown, 2001). They are motivational drivers, serving to motivate behaviours and inhibit others (Schwartz, 1994; Schwartz & Bilsky, 1987). They are directly linked to an individual's self-motivation. Values also serve as ideals and oughts, or judgmental standards (Lord & Brown, 2001). They guide and regulate behaviour, making people strive to constantly reduce discrepancies between their behaviours and values. Thus they serve as guides for individual self-regulation. With respect to self-awareness, though, they seem to operate at a level that is not always totally conscious, below complete awareness (Meglino & Ravlin, 2002) unless explicitly elicited by some event or reflective process. On the other hand, some have

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treated values as facets of self-awareness (Avolio & Gardner, 2005). To be sure, awareness of one's value priorities and orientations are an important part of self-awareness, but values are independent constructs that involve much more than self-awareness, as should be evident in the discussion above.

It follows from the discussion above that values should be directly related to individuals' developmental readiness, since they play important motivational and regulatory roles in all aspects of life, including leadership learning processes. Thus the general hypothesis (see figure 6):

Hypothesis 5: Individual value priorities will predict Developmental Readiness.

Figure 6 - The relationship between Individual Values and Developmental Readiness.
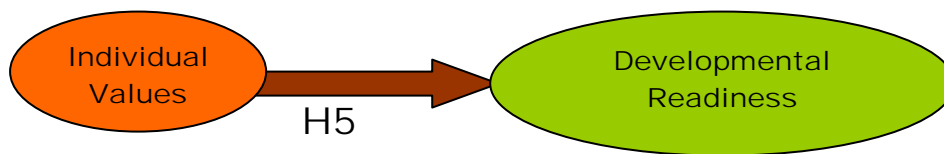
The ten constructs proposed by Schwartz that represent individual values may or may not all be equally important in influencing DR. They are ordered on a circumplex (see figure 7), and seem to relate to other variables in an integrated and consistent manner (Roccas et al., 2002), revealing important patterns of association. Important to note, though, that this last study indicated that there may be some blending between nonadjacent values across the middle of the circular structure.

Figure 7 - Schwartz Values Circumplex (Schwartz, 1994).
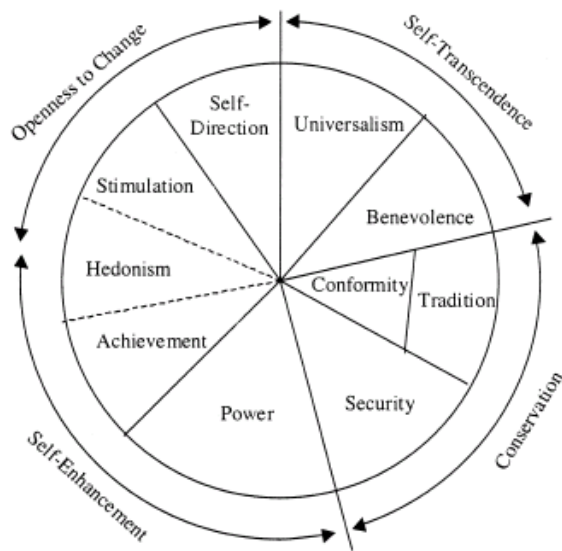
Since some values are opposed to others, then it follows that opposing values will have positive vs. negative associations with self-awareness, self-motivation, and self-regulation and thus developmental readiness. The two higher-order value types Self-Enhancement (SE) and Openness to Change (OC) are value types more likely to be positively associated with DR, since they depict an open orientation and motivate values such as Self-Direction, Stimulation, Hedonism, Achievement, and Power. Clearly these values serve the purpose of driving the individual towards success, achievement, recognition, and the likes. These cannot be attained by being self-satisfied and becoming stagnant, but rather with constant learning and seeking challenges. This brings us again to developmental readiness and the hypotheses:

> *Hypothesis 5a: Self-Enhancement will be positively related to Developmental Readiness such that the more the individual values Self-Enhancement, the higher that individual's DR.*

Hypothesis 5b: Openness to Change will be positively related to Developmental Readiness such that the more the individual values Openness to Change, the higher that individual's DR.

Conversely, the higher-order value types Self-Transcendence (ST) and Conservation (CO) and their underlying values Universalism, Benevolence, Tradition, Conformity, and Security should have a negative relationship with individuals' developmental readiness. This is because they depict a rather closed orientation, pushing the person towards conformism and acceptance and discourage challenging old ways and trying out new ways that involve risk-taking. They do influence self-motivation, but in a restrictive manner; self-regulation likewise, by inhibiting any actions or behaviours contrary to established norms, thus stifling creativity. Thus the hypotheses:

Hypothesis 5c: Self-Transcendence will be negatively related to Developmental Readiness such that the more the individual values Self-Transcendence, the lower that individual's DR.

Hypothesis 5d: Conservation will be negatively related to Developmental Readiness such that the more the individual values Conservation, the lower that individual's DR.

Davidov, Meuleman, Billiet, and Schmidt (2008) argued (based on Schwartz's (1992) seminal work) that Schwartz's 10-value division may be an arbitrary convenience and may well be partitioned into other broader or narrower value constructs on the continuum depending on the study aims and the level at which one wishes to discriminate among the different value motivations. Thus a further higher-

order partitioning of values is proposed here: two constructs, COST, consisting of conservation and self-transcendence, depicting a somewhat Closed Orientation, and OCSE, consisting of openness to change and self-enhancement, depicting an Open Orientation.

A closed orientation is one that holds onto tradition, routine, familiarity, and the security that one senses when one is in that realm. A closed orientation is not expected to drive individuals to seek learning and development – old dog, old tricks! Thus COST is expected to be negatively associated with DR.

Hypothesis 5e: A Closed Orientation will be negatively related to Developmental Readiness such that the more the individual values COST, the lower that individual's DR.

On the other end of the spectrum, an open orientation is one that seeks change, challenge, feedback, and adventure. It is expected to highly drive individuals to seek developmental opportunities and influence their readiness, DR. Thus OCSE is expected to be positively associated with DR.

Hypothesis 5f: An Open Orientation will be positively related to Developmental Readiness such that the more the individual values OCSE, the higher that individual's DR.

4.5 Personality, Developmental Readiness, and Competencies

There is evidence in the literature recognising the role of personality in predicting different outcomes. Personality has been linked to leadership, leadership style, work behaviour, global leadership skills, performance across many levels, and

achievement. Hogan and Kaiser (2005) found that personality predicts leadership style. Judge et al. (2002) found significant correlations between the Big Five and leadership. Judge and Bono (2000) and Bono and Judge (2004) found that some of the Big Five were specifically related to transformational leadership. Four of the Big five were found to be related to charismatic and transactional leadership (De Hoogh, Den Hartog, & Koopman, 2005). Dalton and Ernst (2004) also found that all five factors are related to different aspects of global leadership. Personality was also linked to leadership effectiveness and performance (Atwater, Dionne, Avolio, Camobreco, & Lau, 1999).

Personality has also been found to be directly linked to goal orientation (Wang and Erdheim, 2007; Bipp et al., 2008). In terms of outcomes, personality has been linked to major life outcomes, performance outcomes such as skill acquisition, task effectiveness, and managerial effectiveness, and other work behaviours (Hough & Oswald, 2008). Personality has also been found to predict organisational success and failure (Havaleschka, 1999). Conscientiousness, openness to experience, and extraversion were linked to training performance (Dean, Conte, & Blankenhorn, 2006; Salgado, 1997), and openness to experience and extraversion were linked to training proficiency and performance (Barrick & Mount, 1991).

Evidence has also been found supporting the predictive role of personality with respect to job performance outcomes (Barrick & Mount, 1991; Salgado, 1997; Hurtz & Donovan, 2000). Furthermore, correlations have been found between the Big five and competencies such as planning, organising, and other leadership and managerial competencies (c.f. Nyfield, Gibbons, Baron, & Robertson, 1995; Robertson, Baron, Gibbons, MacIver, & Nyfield, 2000), as well as contextual and task

performance (Hogan & Holland, 2003). Bartram (2005) found evidence of close concordance between Extraversion, Agreeableness, Conscientiousness, and Neuroticism (negative) on the one hand and a broad variety of competencies such as interaction, presentation, support and cooperation, organisation, execution, adaptation, coping strategies, leadership, decision making, analysis, interpretation, creation, and conceptualisation on the other hand. Bartram (2005) found that personality actually accounted for competencies more than ability.

Now performance is observable from people's actions (Campbell, 1990), and actions reflect different competencies and capabilities. Personality has been linked to cognitive and meta-cognitive skills (Bidjerano & Dai, 2007). As can be seen from the studies discussed above, social competencies such as interaction, support, and cooperation, cognitive competencies such as analysis and interpretation, emotional competencies such as adaptation and coping strategies, and behavioural competencies such as organisation and execution have been found to be related to or predicted by personality dispositions. It follows, then, that personality plays a role in predicting performance, and also predicts certain competencies and capabilities as well as the acquisition thereof.

Personality, though, seems to be a more distal (though pervasive) determinant of competencies (Bidjerano & Dai, 2007). It is suggested here that DR will further help us understand the effect of personality dispositions on competencies, and Developmental Readiness may be a more proximal predictor of competencies over and above the Big Five. What is further suggested here is that Developmental Readiness may act as a mediator between personality dispositions and competencies. Although there are no studies suggesting the role of Developmental Readiness in

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mediating between personality and competencies, self-regulation has been proposed as a potential mediator between personality and academic performance (Pintrich, 2000), and self-regulated learning was found to mediate between Conscientiousness and Agreeableness and GPA (Bidjerano & Dai, 2007). Motivation has also been proposed to mediate between stable dispositional attributes and self-development (Boyce et al., 2010).

For a mediating role to be proposed, Developmental Readiness would be expected to also be directly linked to competencies. This is very likely since over the course of a career, people tend to develop work-related, managerial, and leadership competencies anyway, drawing from experiences and challenges faced on-the-job. Thus a natural learning curve already exists for most individuals. There is some variance, though, in the extent of learning and development that individuals actually acquire over their life/career-span. This is due to many factors, including various individual differences, some inherited and others acquired, but may also be due to differences in Developmental Readiness.

Development is a metamorphosis in actions, behaviours, and competencies (Boyatzis, 2008). It is an extension of capabilities (Van Velsor & McCauley, 2004). On the other hand, DR accelerates development, that is, DR enhances the learning curve, resulting in more development, more metamorphosis in competencies, and more capabilities. It follows, then, that a higher DR will be related to more competencies in an individual's repertoire and higher competency levels. This may actually explain why individuals on the same career paths exhibit different competency levels.

In summary, personality was earlier hypothesised to predict Developmental Readiness. Additionally, and based on the discussion above, it is expected to predict competencies. DR, on the other hand, is directly related to competencies. It is proposed here that DR will further clarify the mechanisms through which personality affects competencies by predicting competencies over and above the Big Five. That is, DR will mediate the relationship between personality and competencies. Thus the hypotheses:

> ***Hypothesis 6: Personality dispositions will predict the leadership competency level of individuals in the following manner:***

>> ***Hypotheses 6a, b, c, d: Extraversion, Agreeableness, Conscientiousness, and Openness to Experience will be positively associated with the leadership competency level of individuals.***

>> ***Hypothesis 6e: Neuroticism will be negatively associated with the leadership competency level of individuals.***

> ***Hypothesis 7: Developmental Readiness will mediate the relationship between personality (E, A, C, N, and O) and competencies. (7 a, b, c, d, and e respectively).***

4.6 Students versus Executives

Based on the discussion in chapter 2 on the differences between novices and experts, the development of expertise, and student versus executive learning patterns and competencies, some differences are expected between students and executives regarding personality and values.

Associations between personality dispositions and DR are not expected to differ significantly between students and executives, even though personality is not expected to stabilise before age 30 (McCrae & Costa, 1999; Costa & McCrae, 2002), which means that it is still changing especially in the case of students. But that does not have significant bearing on the relationships being studied in this case.

As for values, these tend not to be very salient for many people, since they work at a level just below consciousness (Meglino & Ravlin, 2002). One would expect that they would be even less salient for people younger in age as they are still being formed. Young adulthood seems to be a phase where a process of adoption or rejection of parental values, values emphasised by influential people in one's life is activated, resulting in a choice of one's own values as the process of maturation is undergone. Thus values are not expected to play as salient a role in the case of students as in the case of executives. Thus the hypotheses:

> *Hypothesis 8a: there will be no observed significant associations between values and Developmental Readiness in the case of students.*

> *Hypothesis 8b: there will be observed significant associations between values and Developmental Readiness in the case of executives (same hypotheses as hypothesis 5 will apply).*

4.7 Chapter Summary

This chapter started out with a discussion of individual differences and their role in predicting diverse outcomes, including developmental readiness. Two individual differences, personality dispositions and individual value orientations, were suggested to be directly related to developmental readiness. Relationships between

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each of the Big Five personality dimensions, between each of the four broad value orientations (as well as two higher-order orientations) on the one hand and developmental readiness on the other hand were proposed, where dispositions and orientations that depict more open attitudes and orientations were proposed to be positively associated with developmental readiness, and ones that depict more closed orientations and attitudes proposed to be negatively related to developmental readiness.

Personality and its relationship to competencies was also discussed, and developmental readiness was hypothesised to mediate the relationship between the above two constructs. Finally, a brief discussion on the differences between students and executives was rendered, stemming from the discussion in the previous chapter.

The hypothesised relationships in this and the previous chapters beg an empirical investigation. The following chapters discuss the methodology, study design, and results from an empirical study conducted to test these hypotheses.

CHAPTER 5: RESEARCH METHODS

5.1 Chapter Overview

This chapter provides an overview of the methodology chosen and used in this research, the rationale behind the choice, and the study design. A description of the data collection procedures, instruments used, and analysis methods chosen is provided. The chapter is organised as follows: first, a discussion of the theoretical stance, paradigms, epistemology, and ontology taken in this research is presented. Next, study design, sample and participants, programme choice for the pre-post test design, and data collection methods and instruments are discussed, followed by reliability and validity information. Then data analytical methods used are presented, starting with factor analysis and scale structure, common method variance, then hypothesis testing procedures (including inferential statistics, multiple regression, and analysis of variance). Some particular issues faced in this research are presented (the use of difference scores, the issue of causation). Power analysis procedures are then presented, both a priori and post hoc. Finally, a brief discussion of ethical considerations involved in this study concludes the chapter.

5.2 Theoretical Perspective

The decision regarding what methods to use in any particular study should follow inherently from the study's inquiry purposes and questions. One should not overlook, though, the importance of positioning oneself with regard to the different philosophical stances and worldviews in conducting research. The intent here is not to enter into either a full-fledged description or a debate of the different philosophical paradigms that exist, rather to clarify where this research stands. Nonetheless, a brief discussion of philosophical approaches and paradigms will be presented below.

5.2.1 Paradigm, Epistemology, and Ontology

The nature of knowledge has long been an issue of debate, not least in the field of the social and human sciences. "The realm of ideas is currently as unsettled as the map of nations" (Hollis, 1994). So is the realm of philosophical approaches underlying current research. Whichever philosophical standpoint(s) one chooses to adopt, each will have much to offer while being bound by its limitations.

According to Burrell and Morgan (1979), "all theories of organisation are based upon a philosophy of science and a theory of society" (p.1). Burrell and Morgan argued that research can be analysed based on two key dimensions: the subjective-objective dimension (nature of science) and the regulation-radical change dimension (nature of society). Figure 8 below illustrates these dimensions. Most social theorists are located or operate within one of these four paradigms, although some authors (e.g. Lewis & Kelemen, 2002) question whether these boundaries are more or less incommensurable. At the methods level, greater flexibility is permitted, allowing for more eclectic or mixed methods approaches.

Figure 8 - Four Paradigms for the analysis of social theory.

THE SOCIOLOGY OF REGULATION
Source: Burrell and Morgan (1979, p. 22)

To summarise Burrell and Morgan's (1979) four paradigms, the Radical Humanist paradigm adopts a subjective ontology, concerned in developing a sociology of radical change. An emphasis on human consciousness (similar to interpretivism) is central, and the concern is to release human consciousness from social constraints placed upon human development. Emphasis is on radical change, modes of domination, emancipation, deprivation, and potentiality. The Radical Structuralist paradigm is also rooted in a sociology of radical change but approaches it from an objective ontology. It is committed to radical change, potentiality, and emancipation, but approaches these from a realist, positivist, determinist, and nomothetic standpoint. The Interpretive paradigm is rooted in the sociology of regulation. It takes a subjective approach to social phenomena being studied. The concern is to understand phenomena as they are, subjectively created. This paradigm tends to be nominalist, anti-positivist, voluntarist, and ideographic. Finally, the Functionalist paradigm seems to be the dominant framework for organisational psychology and sociology. As can be seen in figure 8, it is rooted in the sociology of regulation and an objective ontology. This approach tends to be realist, positivist, determinist, and nomothetic. Rational explanations are attempted, and usually in a very pragmatic way. This approach utilises the methods most commonly used by the natural methods.

Positivism was a necessary step in the development of the social sciences (Kelemen & Rumens, 2008). It assumes an objective social reality, independent of interpretations. It relies on deduction and empirical testing. It remains the dominant paradigm in management research. According to Trochim (2006), however, a shift has been made since the mid-20th century towards post-positivism, which is essentially a

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rejection of the main tenets of positivism, recognising a link between the way scientists conduct their work and thinking and the way people think and work in everyday life. One of its most common forms is critical realism, which, while holding on to the positivist realist approach, recognises the need to be critical about knowing things with certainty, thus underscoring the fact that scientists need to work towards knowing about reality, while possibly never reaching that goal. Post-positivism emphasises pragmatism, the need for multiple measures and observations, and the need for triangulation when this supports the knowledge process. It rejects the notion of incommensurability of multiple approaches. While an objective stance is taken, it is never fully achieved.

In the interpretivist paradigm, Critical Theory is another perspective that has recently become more popular in management studies. It assumes a subjectivist, value-mediated position (Guba & Lincoln, 1994). Reality is virtually constructed, shaped by a multitude of social, political, and cultural factors. It is concerned with critically evaluating theories and assumptions through dialogue, participant observation, and similar methods (Kelemen & Rumens, 2008). Social constructivism is yet another well established interpretivist paradigm which assumes that realities can be known though social and experiential constructions, where the researcher and participant are intertwined and theory is constructed in narrative form (Kelemen & Rumens, 2008).

The paradigms discussed above (and others that were excluded from this discussion) seem to be at the centre of many contemporary philosophical debates around management research (Ghephart, 1999; Cronk & Fitzgerald, 2002). However, the assumption seems always to be an either/or approach (Nonaka & Takeuchi, 1995;

Hammersley, 1996) at the ontological and epistemological levels. Nonaka and Takeuchi (1995) have argued for a mutually complementary approach in management at the methodological level.

Ghoshal (2005) pointed out how the need to fit management theories into certain constraining paradigms has proved destructive in its resulting theories and applications. Ethics and common sense have greatly suffered because of this. Researchers have lost their taste for pluralism, thus inhibiting the creation of richer environments for knowledge creation. Acknowledging the complexity of human nature, the combinations of positive/negative problems, and the existence of the diversity of preferences would change our assumptions and our theories – for the better. Thus the shift towards mixed methods. Interest in mixed methods is not a new phenomenon in research. It has arisen due to the need for both generality and particularity in many cases, and because of the need to study both patterns of behaviour and their variations and differences (Greene, 2008). In these cases, one method alone is often not sufficient to give a holistic picture, nor will mixed methods lead to the complete truth for that matter (Freshwater, 2007). But mixed methods will often help researchers make more meaningful interpretations as well as give them more opportunity for insightful listening and understanding.

Mixed methods research (MMR) is now more readily recognised (although it still has its dedicated opponents) as the third major research approach (Johnson, Onwuegbuzie, & Turner 2007). It attempts to seek a workable middle solution for many research problems while still respecting both the objectivist, positivist, naturalistic *and* the subjectivist, constructivist, heuristic traditions. According to Lewis and Kelemen (2002), mixed methods research takes a multi-paradigm approach

and thus an accommodating ideology, to the dismay of those advocates of the incommensurability of paradigms, epistemologies, and worldviews: different perspectives are valued and encouraged; ontology is viewed as stratified, reality as having multiple dimensions to be discovered (both "made" and "in the making"); and epistemology is a pluralist one, allowing the researcher to explore alternatives rather than a single reference system. MMR encourages theoretical richness, choices, and multiple opportunities. Shared meaning, joint action, and respect between different perspectives are all emphasised (Madill & Gough, 2008).

Although the question of whether MMR is a distinctive methodology or not remains to be settled (Greene, 2008), it has all the potential to be so. With boundaries that seem to be increasingly porous and blurred between quantitative and qualitative methodological approaches, more researchers seem to be leaning towards mixing these two, an endeavour which was frowned upon only a few years earlier. This makes sense in organisational psychology since both organisations and people are overwhelmingly complex, contradictory, and paradoxical in nature. Mixing methodologies can reflect divergent perspectives and have the ability to help encompass dualities in paradoxical and complex situations (Clarke-Hill, Li, & Davies, 2003).

This research does not claim or intend to invent new theory or explore new grounds. The proposed model and framework builds on existing theory, and aims at integrating past theory and bridging a gap in the links between the different theories discussed. It is not exploratory in nature. Therefore the most logical and appropriate approach would be the post-positivist one. Thus reality is assumed to exist but only "probabilistically apprehendable" (Kelemen & Rumens, 2008, p.27). The stance is an

objective ontology, though not viewing reality as existing independently of social actors as in positivism (Bryman, 2004). Nor does objectivism here imply a total detachment from the research problem and participants, with the researcher being expected to eliminate all bias and preconceptions (Smith, 1983). Objectivism in post-positivism is an ideal to strive towards, but the researcher is not fully independent from the object(s) of study.

Despite many criticisms and many researchers who consider this approach outdated, post-positivism still seems to underlie much management and social psychology research conducted nowadays. Using this approach would satisfy advocates of the scientific method. This research would be classified as hard, reliable, and scientific. The main preoccupations would be with measurement, causality, generalisation, and replication (Bryman, 2004).

Taking this post-positivist, objective, and deductive stance, the main concern of this research was to identify observable phenomena, quantify and measure them, and provide empirical evidence through the use of statistical techniques – thus confirming or rejecting hypotheses and feeding back into existing theory. The next step was to test this model empirically. The above epistemological and ontological positions are commonly seen as underlying quantitative research strategies, although it seems that these may more accurately be seen as tendencies rather than necessary prerequisites for quantitative research. Quantitative research is typically viewed as positivist in both conception and orientation (Bryman, 1988).

5.3 Methodology and Study Design

Given the nature of this research, the fact that testable hypotheses have been proposed, the post-positivist approach adopted here, and that the proposed hypotheses must be tested in order to inform both theory and practice, the quantitative approach is the most logical and appropriate methodology to use in this case. Quantitative research is often described as using numbers as opposed to words. The main preoccupations of quantitative research are with measurement (concepts, variables, building consistent measures, degrees of relationships, indirect measures or indicators…), causality (finding causal relationships between variables), generalisation (issues of sample representativeness, sample size…), and replication (possibility of replicating findings from same or different samples using same or different techniques – thus reducing researcher or respondent bias) (Bryman, 2004). Within the quantitative approach, many designs are available, most notably the field (correlational), experimental, and quasi-experimental designs. Designs are usually cross-sectional, longitudinal, or comparative.

On the application level, quantitative research in the social sciences is most commonly associated with the survey design, which most commonly uses questionnaires or structured interviews as the prevalent tools. The social field study correlational design is normally contrasted to the experimental method, which generally uses comparison groups where all conditions are the same except for the variable(s) being manipulated (Bryman 1988, 2004).

Each technique within the quantitative approach has its own strengths and limitations. For example, the most commonly used method of survey design which primarily involves the use of questionnaires has a number of strengths. These include

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its ability to reach a very large number of respondents very efficiently with very low economical costs incurred, the potential for generalizability due to the large samples achieved (provided they are representative), as well as its ability to depict broad patterns and relationships between variables. Experimental research, on the other hand, allows clear causal relationships to be tested and confirmed. Other variables are controlled in order to make sure that the variable being tested causes the effects being studied without any influence from other variables. Longitudinal studies make the testing and establishment of the temporal order of variables clearer. Moreover, the methods and the process used following the natural sciences model make replication possible, thus enabling other researchers to confirm or reject results (Bryman, 1988, 2004; Denzin, 1978).

Experimental designs in the social sciences usually involve at least a treatment and control condition, where assignment to groups is completely random. Quasi-experimental designs, on the other hand, are very similar to experimental ones but differ in that they lack random condition or treatment assignment. Assignment happens through self-selection or administrative selection. However, some control can still be exerted over selection of control groups and type of treatment (Robson, Shannon, Goldenhar, & Hale, 2001; Shadish, Cook, & Campbell, 2002). Correlation in typical cross-sectional studies cannot prove causation, but experimental (and quasi-experimental) studies are well-suited to studying causal relationships, especially those concerning manipulable variables (Shadish et al., 2002). While each of the methods used in quantitative research has its advantages, all suffer from shortcomings, especially with regard to depth of understanding but also with regard to reliability, validity, and generalisation.

This study combines both the field (correlational) survey design with a quasi-experiment (pre-post intervention with control) approach. Two groups were included in all cases – those on developmental programmes and control groups. Control groups consisted of comparable participants (in terms of age, tenure, work experience…) in order to control for as many intervening influences in the developmental process.

The cross-sectional part was concerned with the relationships between personality, values, and developmental readiness. The pre-post non-randomised control design (groups self-selected in the case of formal programmes, and were administratively selected by their work organisation in the case of executive programmes) was concerned with assessing development (change in competencies) and testing for the moderating role of developmental readiness in the developmental process.

5.4 Data Collection

5.4.1 Data Sources

Substantial discussion has revolved around the comparative advantages and disadvantages of using different media in collecting data. For example, face-to-face interviews seem to trigger more socially desirable responding and thus lower accuracy than computer-based, web-based, or paper-and-pencil questionnaires (Bouchard, 1976; Collins, 1970; Shapiro, 1970; Martin & Nagao, 1989; Richman, Kiesler, Weisband, & Drasgow, 1999), thus provoking more common method variance. A recent study by Chuah, Drasgow, and Roberts (2006) found that Internet and traditional paper-and-pencil questionnaires of personality tests proved equivalent

when analysed with IRT, factor analysis, criterion-related validity, and mean differences. This study used online and paper-and-pencil questionnaires.

One issue common to all forms of data collection is the issue of using self-report instruments versus other reports. Self-perception may differ greatly from others' perceptions, especially of behaviours but also of most psychological processes. This has implications for both validity and reliability. Self-reports, or single-source data, have important implications for the internal validity of a study since they are prone to common method variance. When the predictor and criterion variables are obtained from the same source, several biases may occur, most notably the tendency to try to appear consistent (consistency motif), implicit theories and illusory correlations, social desirability, leniency biases, acquiescence tendencies, positive and negative affectivity, and transient mood states (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Multi-source data, on the other hand, overcomes these issues, but makes it harder to attain acceptable levels of measurement reliability and validity.

Podsakoff et al. (2003) warned researchers of the substantial effect that common method variance could have on perceived relationships between constructs. Although varying in intensity across disciplines, it is nonetheless considerable. The effect could also change the direction, either inflating or deflating the strength of the relationship, leading to Type I or Type II errors. Both random and systematic measurement error should be accounted for, the latter more importantly, although many researchers seem to ignore it, probably out of ignorance or possibly for convenience. Cote and Buckley (1987) found that when there is perfect correlation between two constructs, common method variance tends to deflate it, whereas when

they are completely uncorrelated, a positive relationship is observed. This is troubling and underlines the need for vigilance in this area.

Sometimes method effects are produced by item characteristics such as item social desirability or item demand characteristics, item complexity or ambiguity, scale format and anchors, and the presence of reverse-coded items (Podsakoff et al., 2003). Yet other method biases come from the item context within the instrument such as item priming effect, item embeddedness, context-induced mood, scale length, and intermixing items of different constructs (Podsakoff et al., 2003). Finally, the context in which measurement is taking place is also a potential source of bias. Time, location, and medium may inadvertently cause method effects for several reasons (Podsakoff et al., 2003). Podsakoff et al. (2003) proposed a guiding framework by which to assess potential method biases that might be faced within one's research, and suggested ways to avoid or control for these.

The initial study aim was to collect data using multi-source methods (360-degree feedback) to address the above issues. A number of reasons caused the failure of that plan. Gatekeepers and company representatives were hesitant to allow (and in some cases adamantly against) the conduction of the 360-degree feedback proposed. They had concerns over the time lost (although it was explained that the feedback literally took five minutes to complete). Others also had concerns over the "ability" of their employees to engage in such an exercise. Where gatekeepers agreed to the exercise, respondents were very scarce, making reaching an adequate sample size almost impossible within the time-frame required for the research. Thus after a few months of conducting the study in that manner, the decision was made to revert to only self-reports and including a measure of social desirability to control for common

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method bias. Efforts were made to separate data collection both psychologically and contextually (so for example, many participants filled out one wave online and the other using pen-and-paper method).

One last concern was not to activate certain schema undesirable for the study – for example, by asking for demographic data at the onset, a particular mindset could be unintentionally activated. Triggering a certain social identity may portray certain schemas and value sets that may otherwise not be that salient. To avoid this, demographic data was collected at the end of the survey, and only included basic information (so, for example, no questions regarding ethnicity or religion were included).

5.4.2 Treatment Conditions and Interventions

To assess development, and test for the moderating role of developmental readiness in the developmental process, developmental interventions had to be chosen. These had to be consistent in terms of quality, design, and material covered and they had to have a leadership and managerial focus across all samples for comparison and consistency purposes. Therefore formal education programmes (towards a formal degree – MBA, MSc, or BBA programmes) and executive education were targeted as two forms of typical leadership and management development. Courses and executive education programmes were chosen with specific relevance to the research topic. They included both technical managerial skills and leadership competencies. Courses were comparable, all having a taught (lecture - theoretical) and practical (experiential) part, and all following the same basic educational approach.

Two executive education providers were involved in this research: Aston Business School, a part of Aston University (UK) and ALBA Graduate Business School (Greece). Their Executive Education programmes ran over periods ranging from a few months to 1 year. Participants in these programmes were all employed. Cohorts were rather small in size but being from different organisations and from different parts of the UK and Greece provide a random sample which in turn would allow for greater chances of applicability and generalizability. Control groups were employees from the same organisations, not taking part in any developmental programmes. In considering leadership education as part of formal degree programmes, leadership modules were chosen. Control groups were students enrolled in other non-leadership modules (and from different programmes altogether, e.g. marketing or economics and strategy programmes).

Programmes spanned a timeframe of 4-12 months. Participants underwent two waves of data collection. The first wave took place at the onset of the programme. The second wave took place once the programme was completed or a couple of months later. Surveys were either conducted online or using the pen-and-paper approach depending on appropriateness for the situation.

5.4.2.1 Undergraduate Leadership Courses

The undergraduate leadership courses chosen were attended by students during their final year, after they had completed internships in large organisations (placement year), giving them exposure to the "real corporate world". These courses then build on this work experience and offer students exposure on the conceptual and theoretical levels, as well as some practical applications. They span a timeframe of 4-

6 months. These were chosen because of their strong focus on leadership in corporate settings.

Course learning outcomes include: knowledge and understanding of leadership theories, understanding of the progression of the leadership field and the ways in which research has been shaped, understanding how leadership research helps us understand major global and workplace trends (especially globalisation, gender and diversity), acquiring cognitive and analytical skills necessary to evaluate the strengths and weaknesses of theoretical, empirical and experience based approaches to leadership, acquiring key and transferable skills including communication ability, self-directed learning, IT competency, team work, and such.

Topics covered include: leadership theories, the nature of leadership, power, influence, values, traits and dispositions, ethics, motivation theories, contingency theories, leadership behaviour and leader-follower relationships, charismatic and transformational leadership, leadership skills, executive leadership, diversity, change, team and decision groups, and culture. Students are also required to take on real business cases, carry on group based work, and use their analytical skills in various capacities.

5.4.2.2 Graduate Leadership Courses

Graduate students typically have had some previous work experience or are employed while undergoing their degrees. This gives them more exposure and insight into the actual situations that they will encounter as leaders/future leaders. These were also chosen because of their strong focus on leadership in corporate settings.

Leadership graduate courses chosen aimed at providing students with theoretical knowledge and practical skills required to work effectively, as well as enabling them to apply their learning to the broader issue of organisational effectiveness. Learning outcomes include: understanding leadership theories, identifying critical organisational behaviour, analysing organisational issues relating to leadership and organisational behaviour, evaluating effectiveness of different leadership styles, integrating theory and practice, honing research, analytical, communication, and knowledge , as well as identifying and developing personal leadership skills, strengths, weaknesses, and areas for development.

Topics covered include: leadership theories, motivation, justice, personality, leadership styles, contingency theories, power, charismatic and transformational leadership, leadership development, negotiations, executive leadership, and such. Course content is drawn from corporate experience in both public and private sectors, taking international and cross-cultural perspectives, as well as integrating current research findings and applications.

In addition to the theoretical part of courses, practical applications are explored in-depth through real business case studies, hands-on workshops (negotiation, communication, influence, persuasion) and practical exercises and assignments. The courses spanned a timeframe of 3-4 months.

5.4.2.3 Executive Education Programmes

Executive Education covered a wide range of programmes and topics, often customised to fit individual client strategic development needs. Programmes blend new research-based thinking with relevant proven tools and specific skill set building,

using a mix of classroom based learning, real-life business case studies, workshops, coaching, and action learning. These were chosen because they are representative of typical developmental programmes invested in by organisations, and because of their managerial and leadership focus.

Different programmes are offered, such as a Diploma in Management, Certificate in Management, Distance Learning Management Programmes, and stand-alone training programmes. Areas covered include strategic management, marketing management, organisational behaviour, financial management, operations management, people management, accounting, client management, commercial management, risk management, business law, negotiations, leadership development, and research methods for business. Sometimes other topics are included upon a client's demand.

Delivery included a mix of classroom-based training and work-based projects. Programmes are run in small groups (cohorts of 15-25 people at a time) for more individualised development. Shared responsibility was emphasised, and follow-up on groups maintained long after the programme ended. Programmes took between 8 months to one year, and participants get to apply their learning on-the-job as they learn and develop.

5.4.2.4 Executive MBA Modules

For executives who are looking to obtain a formal degree, Executive MBA programmes are offered, in a form similar to executive education programmes, thus their inclusion in the study. Programme designs are similar, though the MBA programme includes a somewhat broader theoretical base.

In addition to the theoretical part, which is essentially very similar to graduate modules, many developmental exercises, including self-assessments, peer reviews and feedback, 360-degree feedback, assessment of strengths and weaknesses, syndicate groups, team work opportunities, and other developmental experiences were integrated into course content. These programmes drew more heavily on the high level executive experience of participants, emphasising strategic decision making. This mix of both the theoretical and the practical gave participants a solid foundation and plenty of opportunity for development, as well as application of learning to their daily work.

5.4.3 Sample

Data was gathered during the period ranging from 2007-2009. Participants were contacted through gatekeepers and sometimes also through direct contact with company representatives who championed the data collection procedure. In the case of students, permission was granted through the Head of Group/Department and course tutors. At each stage, a letter explaining the purpose of the study and what it entails was first sent to organisations or participants in most cases, as well as an Informed Consent form (see Appendices 1 to 5). Where contact was made online, the letter was sent in the form of an email, and the Informed Consent form introduced the survey. A section ensuring confidentiality and anonymity was included in all communications, in compliance with the Data Protection Act (1998). Reminder emails were sent out periodically to non-respondents. At time 2, another letter or email was sent asking for participation, with periodical reminder letters to non-respondents. Only respondents to the first survey were contacted at time 2.

Data collection for the first wave took place in two forms: participants either opted to fill in a paper questionnaire, or provided their email addresses to fill it out online. A link was sent to them subsequently. Data collection for the second wave, i.e. after the training programme or course, took place almost exclusively online, which substantially reduced the response rate as some people completely ignored invitations. Reminders were sent periodically afterwards until no more participants responded.

5.4.4 Variables

All concepts and variables to be measured were specified a priori, as well as the nature of the data needed and the way in which the data is to be analysed (although that was open to extension) before starting out with the actual data collection as recommended in the literature (e.g. Creswell, 2003; Bryman, 2004) and in keeping with the post-positivist stance.

The survey used in this study was administered to participants in two waves: at the onset of the developmental programme they attended and at the end of the programme. Table 2 below summarises the variables used for this study

Time 1: developmental readiness (self-awareness, self-regulation, and self-motivation), personality dispositions, individual values, leadership competencies; desirable responding, as well as demographic and previous training information.

Time 2: developmental readiness, leadership competencies (to measure change between time 1 and time 2), training attended between time 1 and 2.

Table 2 - Study Variables

Construct	Variables
Personality	Agreeableness (A) Conscientiousness (C) Openness to Experience (O) Neuroticism (N) Extraversion (E)
Values	Self-Transcendence (ST) Conservation (CO) Self-Enhancement (SE) Openness to Change (OC) Open Orientation (OCSE) Closed Orientation (COST)
Developmental Readiness	DR Self-Awareness (SA) Self-Motivation (SM) Self-Regulation (SR)
Leadership Development	Competencies Time 1 (LCT1) Competencies Time 2 (LCT2) Development (LD)
Control	Intervention - Control (LDCtrl) Student/Executive (StuEx) Tenure Sex Age Educational level (EDU) Country

5.4.5 Instruments

Table 3 summarises the instruments used in this study. All instruments were combined to form one questionnaire, included in Appendix 6 (note that the MTQ was excluded from the Appendix since it is not available in the public domain and permission for use has to be granted from the authors). The shortest forms of each scale were used, since a high number of variables were to be measured, thus making

the Time 1 questionnaire long. This may have inhibited some participants from

responding. Each instrument will now be discussed in detail.

Table 3 - Instruments Used

Time	Construct	Instrument	Source
Time 1 – prior to intervention	• Personality • Values • DR	• Mini-IPIP • PVQ • RSMS & Private-SC SSRQ MTQ-Short	• Donnellan, Oswald, Baird, & Lucas, 2006 • Schwartz, 2004 • Lennox & Wolfe, 1984 Fenigstein et al., 1975 Carey, Neal, & Collins, 2004 Heggestad & Kanfer, 2000
	• Competencies	• LCP	• M.W. Grojean, personal communication, May 2007
	• Desirable Responding • Demographics • Previous Training	• BIDR • Sex, age, education, tenure, country • Quality, time spent, nature of training	• Paulhus, 1998 • Noe & Wilk, 1993
Time 2 – subsequent to intervention	• DR • Competencies • Training, position	• RSMS & Private-SC SSRQ MTQ-Short • LCP • Other training since intervention; change in position	• Same as above

__The Mini-IPIP__: given the popularity of the Five Factor Model as a

representation of personality constructs, the Mini-IPIP was used as a framework for

this research. There are several instruments available, and after a review of these the

Mini-IPIP was chosen due to its availability and good reliability and validity. For

example, the NEO-PI-R (Costa & McCrae, 1992) is probably the most widely used

inventory, however, it is copyrighted and scored by the test publisher, and only

available for a fee.

The International Personality Item Pool (IPIP; Goldberg, 1999) was introduced in 1996 at the European Conference on Personality. The IPIP was developed in response to a perceived need to hasten the progress of personality research. The IPIP is constantly updated as a result of feedback and findings of the international scientific community (Goldberg et al., 2006). The IPIP website (http://ipip.ori.org/) offers some psychometric information and scoring keys for the items available. It is free of charge and has been translated to over 25 different languages. It has also shown high correlation with the NEO-PI-R and its underlying (FFM) constructs, it shows a good amount of internal consistency, temporal validity, and convergent and discriminant validity, and alpha coefficient levels range between .69 and .91. Test-retest reliabilities range between .79-.88 (longer-term) and .72-.89 (short-term).

One issue in the case of survey research is the length of questionnaires and implications concerning willingness of people to participate and go through the whole research. This is why a short form of the IPIP, the Mini-IPIP, was developed by Donnellan, Oswald, Baird, and Lucas (2006). They confirmed the psychometric acceptability of the Mini-IPIP. There was sufficient evidence and reason for this shorter form of the IPIP to be used in this study especially given the length of the total survey.

The Mini-IPIP consists of 20 items, with four items per personality trait. Participants are asked to rate statements on a 5-point Likert scale ranging from Very Inaccurate to Very Accurate. Across five studies, Donnellan et al. (2006) found consistent and acceptable internal consistency levels (alphas greater or equal to .60), similar coverage of facets comparable to other Big Five measures, and good test-retest

correlations (between .68-.86 (longer-term) and .62-.87 (short-term)). Furthermore, convergent, discriminant, and criterion validity were shown to be acceptable and comparable to other Big Five measures. Therefore the Mini-IPIP was used for this research. Sample items include: "Get chores done right away" (Conscientiousness), and "Am the life of the party" (Extraversion).

Portrait Values Questionnaire: A variety of values survey instruments are available, measuring some or all of cultural, work-related, and individual values. Most notable are the Rokeach Value Survey (Rokeach, 1973), the Schwartz Value Survey, and the Schwartz Value Inventory (Schwartz, 1992). Others include the Motives, Values, Preferences Inventory (MVPI; Hogan & Hogan, 1996), the Work Values Inventory (Super, 1969), and the European Values Survey (de Vaus & McAllister, 1991).

Schwartz's instruments are probably the most widely used. Schwartz found that the structure of people's value systems is universal, whereas priorities differ (Schwartz, 1992, 1994, 1996). A less abstract and more user-friendly scale was more recently developed by Schwartz, the Portrait Values Questionnaire (PVQ). Value items in both the SVS and PVQ were found to have almost equivalent meaning across 65 nations (Schwartz, 1992, 1994, 2004).

The PVQ has 40 items. Participants are asked to read the statements and rate how "like you is this person" on a 6-point Likert scale ranging from "very much like me" to "not like me at all". Alpha ranges were near or above the .70 level for all reported samples. Convergent and discriminant validity was also confirmed (Schwartz, 2004). Thus the PVQ was considered appropriate for this study. A sample

item is the following: "it is very important to this person to show his/her abilities. S/he wants people to admire what s/he does".

*__Developmental Readiness__: to measure DR, self-awareness, self-regulation, and self-motivation need to be assessed.

Self-awareness has been typically measured using self-other rating congruence, i.e. by matching self-assessments with peer and supervisor assessments (Fletcher, 1997; Fletcher & Bailey, 2003). An individual may be assessed using 360-degree feedback, and self vs. other ratings compared. The closer the person's self-rating to others' ratings, the more self-aware; the farther, the less self-aware. For that, initially a short form of a 360-degree feedback questionnaire was used, the Leadership Competencies Portfolio, developed by Michael Grojean (M.W. Grojean, personal communication, May 2007). When this initial plan failed, self-monitoring and private self-consciousness measures were used to measure self-awareness, described in the following paragraphs.

*__RSMS and Private Self-Consciousness__: Self-monitoring is the extent to which people are aware of and observe and regulate their appearances and relationships in public (Simon, 2004). Self-monitoring is also an ability to adapt one's behaviour and responses according to certain social cues (Snyder & Copeland, 1989). On the other hand, self-consciousness can be described as an acute form of self-awareness. Self-awareness is linked to the cognitive self (self-esteem, covertness, perceptions…). The self was classified by Buss (1980) as having two aspects: private and public. The first concerns the unseen aspects observed only by the experiencing person whereas the latter concerns the overt aspects easily noticeable by others.

Private self-consciousness is the habit or disposition of focusing on the private aspects of the self. Church (1997) found that high performing managers were higher on managerial self-awareness and that the latter was significantly correlated with self-monitoring (high self-awareness with high self-monitoring), with a weaker yet existent relationship to self-consciousness. The latter seemed to reflect more of a self-evaluative focus. Self-awareness and self-consciousness seem to reflect situational and dispositional aspects of self-focus respectively (Govern & Marsch, 2001).

Self-monitoring has been found to be convergent with managerial self-awareness, and private self-consciousness captures self-reflection and attentiveness to one's inner states, ideas, and emotions, all reflective of greater self-awareness (Church, 1997). The Private Self-Consciousness scale may consist of two factors labelled ''Self-Reflectiveness'' and ''Internal State Awareness'' (Trapnell & Campbell, 1999; Burnkrant & Page, 1984; Mittal & Balasubramanian, 1987).

Thus the case was strong enough for the combined use of the two in assessing self-awareness. Thus for subsequent samples, self-awareness was measured using the Revised Self-Monitoring Scale - RSMS (Cramer & Gruman, 2002) and the Private Self-Consciousness Scale - Priv-SC (Fenigstein et al., 1975). RSMS reported alphas are .77 and .70 for the 2 subscales, test-retest reliabilities .53 and .54, and good validity is reported. As for the Priv-SC scale, Fenigstein et al. (1975) reported reasonable reliability and test-retest correlations of .79. It has also been shown to have both discriminant and convergent validity and applicability to a variety of cultures (Carver & Glass, 1976; Turner, Scheier, Carver, & Ickes, 1978; Govern & Marsch, 2001). A sample item of the RSMS is: "When I feel that the image I am portraying

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isn't working, I can readily change it to something that does", and of the Priv-SC is: "I'm aware of the way my mind works when I work through a problem".

SSRQ: As for self-regulation, a 63-item Self-Regulation Questionnaire (SRQ) was developed by Brown, Miller, and Lawendowski (1999). This scale is in the public domain and may thus be freely used without permission. Reported test-retest reliability was high (.94), and the scale showed high internal consistency (.91) as well as high content/convergent validity. Later a short form was developed (the Short SRQ – SSRQ) by Carey et al. (2004).

The SSRQ consists of 32 items, rated on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. Alpha was .92, and further tests by Neal and Carey (2005) found alpha values to be between .84 and .86, with good test-retest correlations. Support for convergent and discriminant validity was also found. Thus the SSRQ was considered appropriate for this study. A sample item is: "I usually keep track of my progress towards my goals".

MTQ-Short: Self-motivation can be described as the individual's motivation to learn. Motivation to learn was initially measured with Noe and Wilk's (1993) Tratt scale, which has shown good reliability (e.g. reliability estimate of .86 as part of Major, Turner, and Fletcher's (2006) study). This scale seemed to capture more of the essence of motivation as related to training and development than the MTQ described below, but after testing it out in a first pilot study, I decided against using it due to very low response rates because of length (over 100 items).

The Motivational Trait Questionnaire (MTQ) was developed by Heggestad and Kanfer (2000) to measure achievement motivation. The MTQ consists of three

dimensions: personal mastery (desire to learn and mastery goals), competitive excellence (other referenced goals and competition seeking), and motivation anxiety (worry and emotionality).

The MTQ-Short consists of 48 items, rated on a 6-point Likert scale ranging from "very untrue of me" to "very true of me". The MTQ was reported to have high internal consistency (.81-.96 test-retest reliability) and alphas ranging from .82-.90. Evidence of convergent, discriminant, and construct validity was also found (Heggestad & Kanfer, 2000). A sample item from this questionnaire is: "when I am learning something new, I try to understand it completely".

DR as a single scale*:* since DR was conceptualised and treated as a single construct, one report was needed. It has already been argued theoretically that DR is a combination of SA, SR, and SM themselves. Thus it is expected that DR should constitute a higher-order factor which is formed of the three lower-order factors SA, SM, and SR. This structure was tested using confirmatory factor analysis.

Since these scales had never before been used as a combined scale, a pilot study was conducted, reported in chapter 6. It is worth noting that although DR is construed as a combination of SA, SR, and SM, a look at the scales shows that they may be capturing additional aspects that may not be directly relevant to DR. This does not apply to the self-awareness scales used, but the self-regulation scale is highly repetitive and is expected to require significant shortening. Furthermore, a much shorter scale measuring the dispositional aspect of self-regulation (goal attainment related aspect) was developed by Schwarzer, Diehl, and Schmitz (1999). This supports the possible need to exclude certain items less directly relevant to DR. As for

the self-motivation scale, only personal mastery seems to be directly relevant to DR, whereas the other two dimensions (competitive excellence and motivation anxiety) are less relevant and may require exclusion. But since all these scales are well established in the literature, the decision was made to start out with the full scales and leave the decision to exclude items to be confirmed by exploratory and confirmatory factor analyses.

LCP - Leadership Competencies Portfolio: one way to measure development is to assess individuals on competencies targeted before and after receiving the developmental intervention. The Leadership Competencies Portfolio (or the Executive Profile) was chosen to assess development in this study. It was developed by M.W. Grojean (personal communication, May, 2007). The factors (or competencies) were designed to assess executive experience and potential. They represent a competency model, using a 360-degree feedback tool or framework. They measure whether individuals have the broad executive skills needed to succeed in a variety of senior executive positions. These competencies were developed by research sponsored by the U.S. Federal Government in 1997, after extensive investigation of the attributes of successful executives in both private and public sectors. They were revalidated and reissued with some modifications in 2006. In their current form, they represent expert thinking of organisational psychologists, HR professionals, as well as senior executives across sectors (M.W. Grojean, personal communication, April 8, 2011). The Executive Profile was also used within the Aston Business School Academic Leadership Development programmes. There are two forms available: a long, detailed form where each competency is assessed with an average of five items, and a shorter form stating the competency, providing a definition, and asking raters to assess

themselves or others (peers, supervisors, or subordinates). Since the above tool was developed in an organisational setting and designed as a competency model rather than a psychometric, and since its psychometric properties had not been assessed in an academic setting, a pilot study was conducted, where exploratory and confirmatory factor analyses were conducted, reported in chapter 6. The LCP consists of 28 items, each describing a competency in detail (leadership or managerial) and is rated on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. A sample item is the following: "Adaptability: willing to compromise, accepts criticism openly and non-defensively, adapts approach to situation and individuals".

__BIDR__: although initially planned as such, multi-source data was not possible. Multi-method data collection (paper and pencil form, online administration) was used in most cases in an effort to reduce common method variance and biases. Additionally, the research version of the Paulhus Deception Scales, the Balanced Inventory of Desirable Responding (BIDR - Paulhus, 1998) was administered in the time 1 questionnaire.

The BIDR consists of 40 items, rated on a 7-point Likert scale ranging from "not true" to "very true". Typical alphas for the BIDR are .67-.77 (Self Deceptive Enhancement) and .77-.85 (Impression Management). The author also reports good convergent and discriminant validity. A sample item includes: "I sometimes tell lies if I have to".

__Demographic-Data__: demographic data such as sex, age, education, position, and tenure, was collected for all participants.

__Training__: questions concerning training were asked at both times to determine and control for previous training received, quality thereof, time spent on training and

development, and (time 2) whether they received any other developmental intervention during the study period or change in position/job responsibility. Some of the questions were derived from the Tratt scale (Noe & Wilk, 1993).

A note is warranted concerning the control variables included in this study. Blind inclusion of control variables seems to be common, though incorrect, practice, as was recently pointed out by Spector and Brannick (2011). The common belief is that their inclusion somehow serves to purify results, a belief which Spector and Brannick termed a "methodological urban legend" (p.288). They urged researchers to clearly state or hypothesise the expected role of included control variables, or else to leave them out (at the very least, to test their hypotheses with and without them).

Eight control variables were included in this study: country, age, sex (gender), education, tenure, previous training, and student/executive and experimental/control status. Though developmental readiness is a relatively new construct, and thus research is sparse, some of these variables have been linked to various aspects of development and its precursors. For example, previous developmental experiences, and work experience were proposed to have an effect on developmental readiness (c.f. Avolio & Hannah, 2008, 2010; Suutari & Viitala, 2008). Life stages and age-related effects on development and cognitive, affective, and motivational drivers were also linked (Day et al., 2009). Gender was found to play a role in emotional and social intelligence and competencies (Hopkins & Bilimoria, 2008), and gender, ethnicity, national background and other social factors were proposed to affect the ability to learn new skills (Hall, 2004). Education has also been shown to help prepare people in learning the cognitive, social, and emotional competencies needed (Boyatzis, 2008; Boyatzis & Saatcioglu, 2008; Suutari & Viitala, 2008). The last two

(student/executive and experimental/control) were included since that was one of the aims of this study, to check for differences between those groups and their effect on the hypothesised relationships. Thus it was deemed useful to include these to observe their effects, and to test the hypotheses suggested over and above these more or less fixed effects. This is also in line with recent recommendations by Antonakis, Bendahan, Jacquart, and Lalive (2010), positing that certain control variables must be included, otherwise results would be erroneous or at the least misleading.

5.5 Reliability and Validity

Internal consistency reliability (Cronbach's Alpha) for all the scales used was assessed using PASW (SPSS) 18. As for validity, the use of treatment versus control group designs is still largely recommended, despite a number of potential threats to validity. In quasi-experimental studies, non-random selection poses a potential threat to validity when differences in characteristics between treatment and control group participants that may influence the variables being measured are present (Robson et al., 2001; Kirk, 1995).

To control for validity threats from differences in characteristics, t-tests were conducted to assess differences between groups in terms of starting competency levels. As for demographic characteristics, one-way ANOVAs were conducted to test for differences between groups.

Selection-history effects could occur during the experiment, where significant changes or events occur that affect only one group within an organisation, for example (Robson et al., 2001; Kirk, 1995). That aspect I had no control of or access to information about.

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Another potential threat is diffusion or contamination, where exchange of information occurs between treatment and control groups (Robson et al., 2001; Kirk, 1995). For the student groups, this was not an issue since control participants were chosen from other departments. Some may have chosen to take leadership courses as electives, but not within the same time-frame. As for the organisations studied, this threat could not be controlled for.

Finally, rivalry and resentment threats, where control group participants are jealous or resentful for not being included in the treatment selection by their organisation, may have been present (Robson et al., 2001; Kirk, 1995). This may or may not have been the case with the executive samples, but again no information of that sort was accessible.

Another important issue to address is that of potential organisational bias. Some of the participants' organisations may already have different developmental programmes in place, especially for fast-tracked individuals. These may include one or more of mentoring, job rotations, training programmes, and so on. This factor was controlled for by explicitly asking for this information (previous training) in order to partial out the effect of this particular developmental intervention on the individual.

Naturally, many factors may come into play that can mask the effect of development on the individual's development. These may be personal, such as family matters, burnout, depression, and the likes, or they may be organisational factors such as lack of job security, de-motivating influences, and unhealthy or stressful job environments. This is especially relevant at this period with the credit crunch and the economic threat hanging over everybody's head at the time the study was conducted.

In terms of the scales used, all of them were chosen to be valid instruments (as per authors' and study reports). Nonetheless, scale structures were tested using CFAs to confirming the factorial validity of hypothesised structures. Additionally, inter-item correlations were checked to confirm convergent validity. As for discriminant validity, inter-correlations between different scale items were also checked. Convergent and discriminant validities thus provide evidence of construct validity.

5.6 Methods for Data Analysis

5.6.1 Factor Analyses

The first step before hypothesis testing was to assess scale structures. Since all scales were either established scales or had been tested through a pilot study, only confirmatory factor analyses were conducted on the actual data (exploratory factor analyses were conducted in the pilot studies, however). The scales were only tested for the time 1 data since their structure or patterns were not expected to change. CFAs were conducted using Amos 18 (PASW-SPSS).

5.6.2 Common Method Variance

Since only self-report data was collected, the possibility of common method bias and desirable responding was present. Two methods were used to control for common method variance. The first was in line with Podsakoff et al.'s (2003) recommendation to control for the effect of a directly measured latent methods factor, in this case BIDR, by including it in a CFA with the whole measurement model. The second method was Harman's one-factor test (Harman, 1967; Podsakoff & Organ, 1986).

5.6.3 Hypothesis Testing

The study consisted of two parts: a cross-sectional and longitudinal one. The cross-sectional one was mainly concerned with the relationships between personality dispositions and value orientations on the one hand, and developmental readiness on the other hand. Additionally, relationships between Personality, Developmental Readiness, and competencies, and comparisons between student and executive groups were tested. As for the longitudinal part, it was concerned with developmental interventions and their effect on development, as well as the moderating role of developmental readiness in the above relationship. Differences between students and executives were also tested, as well as whether the relationships tested in the cross-sectional part hold over time.

5.6.3.1 Inferential Statistics

First, independent samples and paired samples t-tests as well as one-way ANOVAs were conducted to test for all group differences in both time 1 and time 2 (paired samples only in time 2), and also to test hypotheses 2a and 2b, which hypothesised differences between students and executives. Group differences included age, sex, country, education, tenure, experimental condition, sample groups, and previous training. Paired samples t-tests tested for differences in developmental readiness and competencies across the two times. T-tests are appropriate to test for differences in group means. T-tests and one-way ANOVAs are equivalent when two groups are being compared. However, where a group has more than two categories, one-way ANOVAs are more appropriate rather than running several t-tests and inflating type I error (Field, 2009).

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5.6.3.2 Regression Analyses

Whether considering single or multiple independent and/or dependent variables, multiple regression analysis is appropriate for predictive relationships (Pedhazur, 1997). Regression analysis is a highly general and a fairly flexible and robust solution to most research questions, especially those involving predictive and explanatory relationships. Very few or no constraints are assumed on the nature of variables and relationships, and appropriate techniques are available for handling data problems that may be encountered (Cohen, Cohen, West, & Aiken, 2003). This makes it a very powerful analytic tool. Additionally, regression analysis is generally robust vis-à-vis violation of assumptions, except for measurement and specification errors (Pedhazur, 1997). Hypotheses for time 1 and time 2 and the methods used to analyse them are briefly summarised in tables 4 and 5 respectively. For all the hypotheses except 2a and 2b, some form of regression analysis was appropriate.

Hypotheses 1, 4 (with the exception of 4a(i)), 5, 6, and 8, were tested using hierarchical linear regression since relationships were straightforward predictive relationships. In a hierarchical linear regression, variables are entered in blocks based on past research or researcher expectations and decisions (Field, 2009; Cohen et al., 2003). In all the analyses, the appropriate control variables discussed above were entered in a first step. Variable with more than two categories were either recoded into two categories or recoded into dummy variables.

In testing hypotheses 4a(ii), 4b, 4c, 4d, and 4e (personality versus DR), since personality variables work in conjunction with each other, all personality variables were entered together in a second block. This is consistent with studies using

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personality variables as predictors and with the theoretical rationale behind the workings of personality dispositions (c.f. Judge, Higgins, Thoresen, & Barrick, 1999; Dean, Conte, & Blankenhorn, 2006), although some studies have used each personality factor independently (c.f. De Hoogh et al., 2005).

For hypotheses 5 and 8 (a and b), since values constructs are diametrically opposed or adjacent on a circumplex (Schwartz, 1994), high correlations exist between different pairs of variables. Thus only compatible pairs were entered in a second block at a time. That is, Self-Enhancement and Openness to Change were used in one analysis, Conservation and Self-Transcendence in another, and Open and Closed Orientation were each used alone. Using them all in one regression equation will produce results that are incorrect or statistical artefacts rather than correct effects. Even though some studies have combined all values together (c.f. Cohen & Shamai, 2010), Schwartz warned against that in the instructions for analysis and scoring key accompanying his PVQ scales since high correlations between related values or value orientations result in multicollinearity issues.

Hypotheses 6 again had all personality variables entered in a second block. Finally, hypothesis 1 was tested by controlling for time 1 competencies in a second block (in line with Cohen et al.'s (2003) recommendations), and entering the experimental condition in a third block, with Development as a dependent variable.

Hypothesis 4a(i) suggested a curvilinear relationship between Neuroticism and Developmental Readiness. This was tested using both the linear (Neuroticism variable – in a second block) and curvilinear (squared Neuroticism variable – in a third block) as predictors in a hierarchical linear regression (Cohen et al., 2003; Pedhazur, 1997).

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As for mediation analyses (hypotheses 7), these were conducted based on Baron and Kenny's (1986) recommendations. Several steps are involved in mediation analysis: that a relationship exists between the IV and DV, the IV and the mediator, between the mediator and DV when the IV is controlled for, and the IV should add very little influence to the DV beyond that of the mediator. Furthermore, the mediator should not directly affect the IV, nor the DV directly affect the IV or mediator. DR is not theoretically expected to affect personality or values, actually the opposite was hypothesised, nor are competencies expected to affect either personality, values, or DR – quite the contrary actually. Personality and values have been shown to be quite stable individual characteristics that are either inherited or learnt slowly through maturation and internalisation, and DR should affect competency acquisition, not the opposite, though that remains to be tested over time. Thus hierarchical linear regressions were used to test for relationships between personality and competencies, developmental readiness and competencies, and finally a regression was conducted with both the mediator and personality variables, to test whether the mediator influences the dependent variable over and above the independent variable(s). A Sobel (1982) test was conducted to test for significance of the mediation, also based on Baron and Kenny's (1986) recommendations.

Finally, hypothesis 3, which suggested a moderating relationship, was tested using a moderated regression analysis. A moderating relationship is expected when change in the suggested moderator leads to a change in the relationship between two variables (Baron & Kenny, 1986). Here the relationship is between developmental interventions (independent variable; IV) and leadership development (dependent variable; DV). Developmental readiness is expected to moderate this relationship.

According to Baron and Kenny (1986), it would be desirable that the moderator be uncorrelated with any of the other variables, but in practice this is often not the case and it is not necessary that this consideration hold. A new variable, which is the interaction between (or the product of) the IV and the moderator, is calculated. Notable is the fact that the moderator and IV could actually be switched around during testing, thus highlighting that statistically speaking, any one of them could be the moderator, since the interaction term between those is the variable of interest. Determining which is which comes solely from theory (Baron & Kenny, 1986). Baron and Kenny (1986) recommended that moderation be tested by a regression analysis of the DV on this new variable (the interaction term). In fact, moderation can be tested with ANOVA or regression analysis, where the dependent variable is regressed on the independent, the moderator variable, and their product (Edwards & Lambert, 2007).

In testing for moderation, though, field researchers face serious obstacles, making it very difficult to detect such interactions. This may be due to model errors, measurement error, theoretical constraints, and other factors such as the joint distribution of the predictors. McClelland and Judd (1993) argued that "unless researchers can select, over-sample, or control the levels of the predictor variables, detection of statistically reliable interactions or quadratic effects explaining an appreciable proportion of the variation of the dependent variable will be difficult. This does not mean that researchers should not seek interactions in such conditions; however, they should be aware that the odds are against them" (pp.387-388). Because of this difficulty, even very small and seemingly insignificant effects (as low as 1% of the total variance) should be considered (Evans, 1985).

Table 4 - Summary of Time 1 Hypotheses

Hypothesis	Statement	Methods used
2a	Students will have lower competency levels than executives.	T-tests
4	Personality dispositions will predict Developmental Readiness.	Regressions (linear and curvilinear)
5	Individual value priorities will predict DR.	Regressions
6	Personality dispositions will predict the competency level of individuals.	Regressions
7	DR will mediate the relationship between personality and Competencies.	Mediation analysis (Regressions)
8a	There will be no observed significant associations between values and DR in the case of students.	Regressions
8b	There will be observed significant associations between values and DR in the case of executives (same hypotheses as hypotheses 5 will apply).	Regressions

Table 5 - Summary of Time 2 Hypotheses

Hypothesis	Statement	Methods used
1	Management and Leadership Development programmes will be positively associated with leadership development.	Regressions; Repeated measures ANOVAs
3	Developmental Readiness will moderate the relationship between developmental interventions and leadership development outcomes (change in competencies) such that the higher the level of DR, the greater the change incurred.	Moderated regressions; ANCOVAs
2b	Students will develop competencies at a lesser rate than executives.	T-tests

5.6.3.3 Analyses of Variance and Covariance

Multiple regression may be used as a general data analytic system, even where analysis of variance and covariance are typically used, since both represent general linear models (Cohen, 1968). In such a case group membership may be represented as an independent variable (or dummy variable). Multiple regression offers the possibility of adding other independent variables to the treatment variable easily if needed, whereas analysis of variance and covariance do not. In fact, using multiple regression analysis instead of ANOVA/ANCOVA yields more straightforward results since standardised measures of effect size are available (Cohen et al., 2003).

Typically an ANOVA or MANOVA (MANOVA involves multiple outcome variables) is used to determine whether any group differences exist due to a treatment variable. Results are then interpreted to help explain these effects or differences (Huberty & Morris, 1989). Analysis of covariance (ANCOVA), on the other hand, combines and reconciles regression and analysis of variance (Cochran, 1957). Running an ANCOVA therefore essentially means that a regression model is being used (Field, 2009). Some of its uses outlined by Cochran (1957) include removing the effects of disturbing variables in a study, throwing light on the nature of treatment effects, and coping with missing data. A covariance design aims at statistically controlling a variable (with a regression adjustment) so that another variable is studied free of the variance incurred from its association with the first variable (Cohen, 1988).

Typically in experimental and quasi-experimental studies, it seems, analysis of variance is preferred by researchers for hypothesis testing, comparing between experimental and control groups. Although using ANCOVA or multiple regression is mathematically equivalent as was discussed above, and the choice of analytical

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procedure is entirely up to the researcher as long as it is valid and reliable; given that different researchers advocate different methods and some may even be totally opposed to the use of one or the other, the decision was made to also test some Time 2 hypotheses (namely hypotheses 1 and 3) using ANCOVAs and repeated measures ANOVAs.

5.6.3.4 The Use of Difference Scores

Development (change in competencies) was calculated using the absolute difference between time 1 and time 2 competencies. The rationale behind choosing to use the absolute difference score is the following: this research has focused on the development of competencies as the basic tenets of leadership and managerial skills. As people develop these competencies, we expect to see an upward linear trend in their scores, reflecting that change. More complexity underlies the process of development, though. As an example, an individual may rate themselves very highly on a certain competency. However, as time goes on, and that individual learns more about that competency and how to apply it, that individual's perception of what it takes to master that competency and their own self-assessment of it changes. Thus at a later stage that individual may actually rate themselves lower on that competency because of greater understanding and acquisition of the intricacies of that competency. Feedback from other peers, tutors, and supervisors also strengthens that assessment because of greater self-awareness. Thus what may seem to be a decline in level may actually be development of that competency. Relating this phenomenon to Tung's (1998) five-stage process (unconscious incompetence, conscious incompetence, conscious competence, unconscious competence, unconscious super-competence), this may very well be evidence of movement from unconscious incompetence to

conscious incompetence or competence, where development has brought the competence to the conscious domain, resulting in competency building as well as higher awareness and accuracy in self-assessment.

As a practical example, within the author's consulting work in association with a well-renowned training and consulting company in Switzerland, we were examining a number of pre-training and post-training individual scores, especially those directly related to managerial and leadership competencies, and we noticed a downward trend in many of the individuals' scores. Upon further discussion (since the trainers knew the particular individuals' life and work circumstances), we realised that these individuals who showed a downward trend had actually developed these competencies *as well as* a more objective ability to assess these competencies. One particular individual, for example, came in to training with a highly arrogant, over-confident, and "know-it-all" attitude. Upon going through the programme (one that involved training days, one-on-one coaching and follow-up, and subsequent training as well as group work and feedback), that individual (who was a top executive) came out with a much more balanced attitude, approach, and realisation of his strengths and weaknesses, as well as the ability to assess himself objectively. He thus rated himself much lower on competencies at the post-test administration of the survey.

Thus if one were only to look at the scores, one would have concluded that no development occurred, quite on the contrary, that regression had occurred as a result of the developmental programme. That would be a highly erroneous conclusion to make. On the other hand, if one were to assess change by looking not at its direction, but at whether or not there had been any movement or not, one would then reach

different conclusions. This is why the decision was made to use the absolute difference rather than the arithmetic one.

The purpose of using change (difference scores) is to make inferences on true gain, i.e. the difference between pre-test and post-test scores (Lord, 1958). Problems have been noted, though, when using difference scores as either independent or dependent variables. On the one hand, correlations between difference scores and their corresponding pretest and posttest scores tend to be high and may produce misleading findings (Cohen et al., 2003), and on the other hand pretest and posttest scores will most likely be correlated, thus making their difference less reliable than the counterparts (Edwards, 1995), but this doesn't mean that they are unreliable (Smith & Tisak, 1993), but only less reliable than using the component parts thereof. Additionally, difference scores may not accurately portray the variance explained by individual components (Edwards, 1994), since the regression slope (and weights) of both pretest and posttest scores is assumed to be equal, which may not necessarily be the case especially in the behavioural sciences. Furthermore, the effects of the independent variables on each component are confounded when using the difference scores.

Edwards (1995) proposed an alternative method to use when the difference score is used as the dependent variable. However, his main discussion centred around the use of congruence scores (which are usually measured through different constructs or different raters), and around the case where it is endogenous (i.e. dependent on the predictors in the model). Many of the discussions in the literature also seem to centre on difference scores that have different constructs as their components rather than the same construct measured over different time periods.

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Edwards' (1994, 1995, 2001) position seems to be very adamant against the use of difference scores, and rightly so in many cases. However, Cohen et al. (2003) pointed out that in some cases the change may be exactly what we need for our theoretical model. Tisak and Smith (1994a), distinguished between difference scores (distinct constructs) and change scores (same construct), and posited that the latter may be useful measures in some cases. The usefulness (or not) of difference scores is a value judgment that researchers have to make based on the context of their data and study design. They encouraged researchers to evaluate the difference model as well as alternatives such as the absolute difference which may be more appropriate. Difference scores are meaningful constructs that are conceptually different than their components (Smith & Tisak, 1993), and these are not conceptually interchangeable (Tisak & Smith, 1994b). The primary concern should be whether the data fits a predetermined theory rather than an empirical model.

Rogosa, Brandt, and Zimowski (1982) claim that misunderstandings are at the base of the discussions of the deficiency of difference scores, and that it may rather be that the true limitation comes from the data, i.e. having two-wave data that does a poor job of capturing change than the difference score which is actually an unbiased estimate of true change. Ideally, longitudinal studies should have three time collections or more. Two have been argued to be too little to hold enough information or to depict anything other than a linear relationship which may not accurately reflect the "true" change path (Rogosa et al., 1982; Ployhart & Vandenberg, 2010). Nonetheless, studies based on two-wave data seem to be predominant. Additionally, Rogosa et al. (1982) stated that difference scores may not be inherently unreliable, and may be accurate and useful even when their reliability is on the low side.

Furthermore, reliability of difference scores may not be as low as claimed (Spreng, 1994). This argument was confirmed by Edwards (2001). Finally, the issue of correlation between the difference score and the initial measure at time 1 may be another one of the key arguments against the use of difference scores (Cohen & Cohen, 1975) and these may be difficult to interpret especially in the case of quasi-experiments where unequal groups are compared, but that does not necessarily undermine the usefulness of difference scores in reflecting change (Rogosa et al., 1982).

Difference scores may be appropriate to the extent that they capture what is intended to be captured, and the extent to which they are valid and reliable. For example, they may be appropriate for studying correlates or predictors of change, but if large measurement error is involved this may underestimate the strength of relationships with third variables (Raykov, 1999). Kerr (1991) argued for the use of absolute value difference scores in studies where experts and novices are being compared, for example. So although the usefulness of difference score analyses has been questioned and criticised, they still are also quite useful in some cases (Spreng, 1994; McFarland & Ryan, 2006).

The procedures proposed as alternatives to the use of difference scores such as polynomial regression (Edwards, 1994) or the latent congruence model (Cheung, 2009) apply mainly in the case of independent variables or where the algebraic difference is used, and mainly in congruence research. Had the original study design (three-wave data collection) been feasible, latent growth curve modelling (or the latent congruence model; Cheung, 2009) would have offered a plausible alternative. Furthermore, ANOVA designs, and specifically repeated measures ANOVAs (most

typically used when repeated measures are used over time) use the difference score as the basis for their calculations (Cohen et al., 2003). Raw change score as the DV and the pretest score as a covariate is equivalent to a repeated measures analysis (Kenny, 1975).

The use of difference scores is not always ideal. At the theoretical level, they are not expected to perfectly reflect the actual trend of development that takes place, since this is time dependent and should ideally be measured at more time points than only two as is the case here. But here in this study we are primarily interested in checking whether there is some movement (change) pre- and post-intervention. Thus change scores do offer this research unique information not available when using other techniques.

This research has several components that justify the use of the absolute difference scores to measure change:

1. We are not concerned here with the relationship of the IV to the individual components, but to change itself, i.e. development.

2. We are concerned with change, whatever the direction may be. Thus of the methods and alternatives available, no methods are appropriate (or more appropriate than the use of the absolute difference) and no alternative methods have been proposed to date for this particular type of design.

3. When using the absolute difference as the dependent variable, the problems associated with traditional arithmetic difference scores do not apply.

4. The specific case of change used in this research, i.e. using the same respondents, same instrument, same method over two time points has not been explicitly discussed in the difference score literature, thus Edwards' (1995) or others' alternative solutions do not apply. Furthermore, when using the absolute value, no equivalent analyses have been proposed.

5. The problem of assigning equal weighting to pre-test and post-test scores is not an issue for this research. True, self-ratings may have been influenced by other factors on each particular occasion, but these would be randomly and equally applicable on both occasions.

6. The mathematical procedures described in criticising change scores are not applicable in the case where it is used as the dependent variable, nor in the case of absolute change.

7. Measures of both pretest and post-test were uncorrelated with treatment (c.f. Kenny, 1975).

8. Measures of pretest and post-test were uncorrelated with the absolute difference (change) either.

9. The measures of time 1 and 2 are not conceptually distinct – they are the exact same measure reported by the exact same people.

10. The difference score is exogenous, and we are not interested in the effects of the independent variable(s) on the compounds of the difference, but on the difference itself. Otherwise the hypotheses would have been formulated differently.

Difference scores are still being used quite often despite the criticisms. For example, difference scores have been used to measure faking behaviours (McFarland & Ryan, 2006), average cultural differences (Chen, Kirkman, Kim, Farh, & Tangirala, 2010), performance (Seo, Goldfarb, & Feldman Barrett, 2010), and personality (Kamarul Zaman Bin Ahmad, 2008). They are also often used in scientific experiments (c.f. Gregoire, 2005). A mathematically equivalent alternative also used is that of using variations of the posttest as dependent variable, experimental condition as independent variable, and controlling for pretest (c.f. Hoover, Giambatista, Sorenson, & Bommer, 2010; Christ, Hewstone, Tausch, Wagner, Voci, Hughes, & Cairns 2010). Another equivalent procedure used often is the repeated measures ANOVA or ANCOVA (using pretest and posttest or difference scores, yielding equivalent results).

While acknowledging the criticisms concerning difference scores, these are still deemed useful in this research design. Furthermore, I fully concur with his synopsis of difference score myths (Edwards, 2001), but they do not apply to this design nor is this study an accomplice in propagating these myths. The absolute difference was used as the dependent variable in regression and moderated regression analyses. Pretest was controlled for (Cohen et al., 2003; Davis, Kick, & Burns, 2004), which is appropriate as it is uncorrelated with the absolute difference.

5.6.3.5 The Issue of Causation

It is well known that correlation and cross-sectional studies cannot claim to prove causation, especially where it is not known which variable comes first. Thus it would not be appropriate to make causal claims based on these analyses alone, especially in the case of relationships between DR and competencies for example,

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although DR is theoretically expected to be the predictor. However, the extensive discussion in chapter 4 showed that personality dispositions are relatively stable individual characteristics and are partly inherited and partly adaptations to one's environment over an extended period of time (McCrae & Costa, 1996, 1999). In the case of values, these are also adapted, adopted, and made salient (or not) and come from a combination of cultural values and unique life experience (Schwartz, 1999), which does not happen overnight either. They are beliefs; guiding principles underlying most human decisions, attitudes, and actions (Schwartz, 1994; Rokeach, 1973).

Thus it cannot be said, for example, that DR or competencies may predict or cause personality dispositions or values. There are no theoretical grounds for that. Quite to the contrary, personality factors account for most variations in human behaviour (Paunonen & Nicol, 2001) and have been shown to account for various individual differences in numerous studies to date. Thus it is theoretically and logically justifiable to claim causation in both the case of personality and values.

Recently, Antonakis et al. (2010) highlighted several concerns in making causal inferences. This article comes at a point where no further data can be collected, but I have tried to make sure that I have addressed the concerns that I do have some control over *a posteriori*. One major concern is endogeneity, which is mainly bias in results because of omitted causes. In this study as many individual differences that could be included and that were considered relevant to leadership development and developmental readiness were included (age, sex, education, tenure, previous training, etc...), though the suggested IQ was not, nor were cultural factors accounted for.

Antonakis et al. (2010) claim that "natural" or randomised experiments, if correctly designed, may avoid the endogeneity issue and allow for causal inferences to be made. Mine was not a randomised experiment, as participant groups self-selected for courses or were selected by their organisations. The experimental and control groups, though, proved to be fairly similar in terms of characteristics so as to be interchangeable.

Thus to address the above concerns, I tried to include all variables that may be expected to influence the dependent variables, controlled for those differences that did exist, controlled for known fixed effects, ensured that reverse causality (that the IV is caused by the DV) is not theoretically plausible, measured the IV and DV at different times for some hypotheses, checked that common method variance does not pose a problem since self-reports were the only possible medium, and was as rigorous as possible in both design and analysis. Some of the other concerns or solutions involved more sophisticated programmes or techniques than were available to me and thus were not possible at this time. Future research would do well to heed the recommendations from the study design stage.

5.7 Power

5.7.1 A Priori

Power analysis should be used to evaluate the sensitivity of a study and to make decisions about the criteria used to define statistical significance (e.g. Type I vs. Type II errors); it is both a planning and diagnostic tool (Murphy, 2004), i.e. should be used both *a priori* and *a posteriori*. According to Cohen (1988), power depends on

the *significance criterion* (alpha), the *effect size*, and the *reliability* of sample results which is always dependent on *sample size*.

Tests of significance are one way of evaluating the statistical significance of a relationship, given a certain level. For regression, two main tests of significance may be used: the omnibus test (i.e. the overall R^2 or F-test) and the test of individual coefficients (i.e. the t-test). Other tests exist, all variations of the above two. In simple linear regression, tests of significance commonly used are the F-test and the t-test. In multiple regression analysis, the significance criterion is obtained using different variations of the F-test, depending on the case in question – such as tests of R^2, regression coefficients, and tests of increments in the proportion of variance accounted for by a given variable. In addition, confidence intervals are set to define the likely range of the effect size and significance of the test (in the latter case it is equivalent to the t- or F-tests in terms of determining whether the interval includes zero). (Pedhazur, 1997)

The effect size can be determined using f^2, and effect size can either be small, medium, or large. It can also be pre-determined or calculated depending on the aims and conditions of the study. Important here is that values chosen for each will be ones that maximise power and statistical significance. This will determine the sample size to be chosen.

In a univariate analysis of variance model, the most common way of evaluating independent variable effects is the F-test (Olson, 1976). The F test is also appropriate for two populations with different sample sizes, with a few modifications. The mean then becomes a weighted mean in all computations, the weight being the

proportion of the sample in each group. If the larger sample has a more extreme mean, then power will increase, and vice versa. (Cohen, 1988)

Finally, determining the minimum or optimal sample size for any study is an important decision to be made. Several rules-of-thumb exist that researchers typically use. Some of them recommend that sample size N be determined by some constant or some ratio (e.g. 5-to-1) of sample size to number of predictors, while others combine the two (constant and number of predictors). The main problem with these simple mathematical approaches is that they typically ignore power and effect sizes, which often results in studies with very low power and/or inadequate effect sizes (Green, 1991).

Green (1991) suggests that it pays off better if slightly more complex rules-of-thumb were used from within a power analysis framework. This would involve, as mentioned above, alpha (Type I error probability), power (1 – [Type II error probability]), and effect size. Green suggested a more complex rule-of-thumb where minimum sample size is a function of effect size and number of predictors for multiple and partial correlation. Beyond this rule-of-thumb, he recommended conducting power analyses for greater accuracy and flexibility. Furthermore, he reminded researchers that effect sizes should be determined based on study characteristics rather than assuming typical values. The minimum sample size then required would be the larger one of those determined for the multiple and partial hypotheses if the latter were to be part of the study.

A priori analysis led to the decision to set the alpha level at .05, a significance level that has become traditional in research (Green, 1991), and to set power to range

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between .80 and .90, .80 having been proposed by Cohen (1988) as an acceptable value for a wide range of behavioural research areas. Cohen (1988) also proposed values of f and f^2 for relative effect sizes for the inexperienced researcher. He proposed values of .02, .15, and .35 for f^2 as pertaining to small, medium, and large effect sizes respectively in regression analyses. As for analyses of variance for groups with equal number of observations, values of f are .10, .25, and .40 respectively, thus f^2 values of .01, .0625, and .16. The groups were not expected to be of equal sizes, but the conventional values still apply, according to Cohen (1988), using the arithmetic mean to calculate average group size.

Using Green's (1991) rule-of-thumb, the minimum required sample size can be determined. What was needed, then, was to determine what effect size is wanted for this study. The larger the effect size, the more power, and the less the sample size needed. The smaller the effect size, the less power, and the more sample size needed. Typical studies in the behavioural sciences opt for a medium effect size, but each study needs to consider what effect size is appropriate in its specific case (Green, 1991). Studies in personality and social psychology tend to have small effect sizes, according to Cohen (1988), but those should not be so small as to be almost impossible to detect. In this study's case, minimum sample size calculated was 88 for a medium effect size. For ANOVA, minimum sample size needed was 196 for a medium effect size, Thus sample size targeted was to be >= 196, approximately 200.

Since SEM was expected to be used, sample size must also be determined according to its requirements. Biddle and Marlin (1987) suggested that regression problems should not be solved using SEM with more that (N/10) – 2 variables. General recommendations have set 200 as a minimum for SEM analyses (c.f.

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Bearden, Sharma, & Teel, 1982), or a 5:1 ratio of cases to parameters to be estimated (Raykov & Widaman, 1995; Bentler, 1995).

Given a medium effect size f = .25 and a sample N = 200, what is left is to determine the significance level (a) which will maximise power. (a) could be set at .01, .05, or .10. The degree of freedom (u) is determined by subtracting the number of means (k=2) by 1. Thus u = 1. The mean sample size n for ANOVA is N/k = 108 (Cohen, 1988) for unequal groups. If a=.01, power=.83; if a=.05, u=1, p=.94; a=.10, u= 1, p=.97. These power values are all highly adequate. If, on the other hand, power is to be preset between .80 and .90, then again using Cohen's tables for ANCOVA, we get n= 64 to 84 respectively, and thus an N= 128 to 168 would suffice for a medium effect size with a=.05 and u=1.

In the case of regression analysis, power is calculated slightly differently (see Cohen, 1988, pp. 407-465 for a detailed discussion). With f^2 = .15 for medium effect size, a=.05, u= 8 (max. number of variables in a given equation), v= N – u – 1 = 200 – 8 – 1 = 191. Thus $\lambda = f^2 (u + v + 1) = .15(8 + 191 + 1) = 30$. Consulting Cohen's tables, power will be above .98. Thus a sample size of 200 would yield very adequate power. More precise values could be obtained by interpolation on these values.

Needless to say, these a priori power approximations were based on general rules-of-thumb and tables are not strict power calculations. The exact value for power was determined later using specialised software. Given all the above assumptions and rules-of-thumb calculations, a sample of around 200 participants was deemed desirable a priori.

5.7.2 Post Hoc

After data collection, power calculations were carried out using G*Power 3.1. These are reported for each hypothesis tested in the results chapters (7 and 8). G*Power is a free of charge power analysis programme available for Windows and Mac users for most of the statistical tests commonly used in the social and behavioural sciences, including regression analyses, t-tests, analysis of variance, and others (Faul, Erdfelder, Lang, & Buchner, 2007; Faul, Erdfelder, Buchner, & Lang, 2009). G*Power covers a priori, compromise, criterion, post hoc, and sensitivity analyses. A priori, necessary sample size is computed based on user decisions concerning significance level, effect size, and desired power whereas post hoc analyses calculate power based on significance levels, effect size, and existing sample size (Faul et al., 2009).

5.8 Ethical Considerations

Doing research in any setting or context will inherently raise some ethical issues to be dealt with. Ethical issues are receiving much attention since violating those poses a threat to journals, institutions, and individual researchers. The Aston Business School Research Ethics Committee provides a set of ethical guidelines to be followed in conducting research at the university. Four broad principles were discussed: Beneficence ('do positive good'), Non-Malfeasance ('do no harm'), Informed Consent, and Confidentiality/Anonymity (Evans, 2004). Ideally, it was recommended that volunteers be used (without very significant incentives to make the offer impossible to refuse especially to socially disadvantaged individuals), with a proper procedure in place for participants to raise any issues, complaints, and concerns and to withdraw if they so wish. Prior to data collection, methodology and

data collection procedures went through rigorous scrutiny, were reviewed, and approved by the Research Ethics Committee. Issues were addressed as demanded and appropriate. This study was conducted while adhering to the highest possible ethical standards.

5.8.1 Technical Competence

Aguinis and Henle (2004) posited that the first step in addressing research ethics is to evaluate one's technical competence to conduct the research proposed, as well as knowledge of ethical guidelines and high quality research design. This of course is an issue in most PhD students' research, since they may not be typically very experienced in conducting such projects. Expertise is gained along the way, though. This issue is also offset by the role that supervisors, professors, and colleagues play in pointing out different issues and ensuring a high quality of research. To address this issue, I diligently studied the relevant methods and tools available for research to gain understanding and expertise in the methodological domain. Additionally, I regularly consulted with the group statistician, with my supervisors, and with other colleagues to ensure the appropriateness and methodological rigour needed. Furthermore, I completed the National Institutes of Health (NIH) Web-based training course "Protecting Human Research Participants" to be sure that I was aware of all ethical considerations.

5.8.2 Risks and Benefits

At the onset of research, researchers must evaluate potential risks and benefits to both respondents and the academic/practitioner communities. These risks include wasted time, invasion of privacy, anxiety or stress caused (Aguinis & Henle, 2004;

Evans, 2004). On the other hand, the cost or damage that may be incurred from *not* conducting the research (which would otherwise advance knowledge and inform practice) should be evaluated and weighed against possible damage to respondents. This research's purpose was to inform theory and be practically relevant. It aimed at "doing good" by being rigorous and addressing gaps in the literature, as well as provide a framework of practical relevance to the practitioner community. On the other hand, I am not aware of any harm caused due to this study's administration to participants.

5.8.3 Respondent Rights

Oliver (2003) stressed the importance of being rigorous with regards to ethical issues in research and the huge responsibility researchers have towards fellow researchers, respondents, and the academic and practitioner communities. One of the most important ethical dilemmas concerns the safeguarding of respondents' rights. Numerous scholars have stressed the importance of obtaining informed consent (written or verbal) from participants, and their right to withdraw at any point during the study without suffering any negative consequences (Oliver, 2003; Aguinis & Henle, 2004; Evans, 2004). This is especially the case in studies involving university students, who may be coerced into responding for fear of negative consequences. To address this issue, all participants were given an Informed Consent Form to read (see Appendices 2 to 5) before completing the questionnaires. The informed consent forms explained the purpose of the study, the steps involved in participation, potential risks and benefits, as well as a statement of confidentiality, anonymity, and data protection. Finally, the right to withdraw or raise any issues or concerns was highlighted and my contact information provided. In the students' case, a draw for an IPod Touch was

included as a token of thanks and extra incentive. This did not present a scenario where participation in the study was impossible to refuse because of the incentive provided. Furthermore, no coercion by supervisors or course instructors was used in the case of students. Participation was completely voluntary.

Respondents' right to privacy, confidentiality, anonymity, and protection from deception should be safeguarded (Aguinis & Henle, 2004). This is why a detailed debriefing is recommended. Complete anonymity should be preserved, unless consent is obtained. One should ensure that no one has access to the information except those doing the research, and that no identifying features appear in the study report (Evans, 2004). Data collected in this study included questionnaires filled out by the same individual at different times. Thus I needed to keep track of respondents' corresponding data. For this purpose, names and emails were requested, and were then coded such that the final data set only included the codes. In the case of students emails were used for the IPod Touch draw. Complete anonymity was preserved, and no mention of any identifying features beyond the programmes attended was made in the thesis.

5.9 Chapter Summary

This chapter provided detailed information regarding the methodology used in this thesis. A post-positivist approach was taken, and the study design included both a cross-sectional part and a pre-post non-randomised (quasi-experimental) control design. An overview of the developmental programmes used in the context of this study was presented, as well as detailed descriptions of the data collection procedures, instruments, sources, and analytical procedures. The debate surrounding the use of difference scores and the issue of causation especially in cross-sectional designs were

also presented. Next, a priori and post hoc statistical power analyses were discussed pertaining to this study. Finally, ethical considerations were highlighted.

The next three chapters set out to test the hypotheses proposed and report the results from the analyses conducted. Chapter 6 presents the two pilot studies conducted to confirm the structures, reliabilities, and validities of the Leadership Competencies Portfolio and the Developmental Readiness measures used. Chapters 7 and 8 present time 1 and time 2 results.

CHAPTER 6: PILOT STUDIES

6.1 Chapter Overview

This chapter outlines two pilot studies conducted to assess the structure, reliability, and validity of the Leadership Competencies Portfolio (LCP; M.W. Grojean (personal communication, May, 2007)) and the Self-Awareness, Self-Regulation, and Self-Motivation scales combined to measure Developmental Readiness. Exploratory and confirmatory factor analyses were conducted, as well as internal consistency reliability assessment. The LCP was problematic in the sense that exploratory factor analyses revealed factor structures that did not make sense theoretically. Thus a one-factor model was tested in addition to the models resulting from the EFAs. As for the second study, the separate self-awareness, self-regulation, and self-motivation scales were first tested using confirmatory factor analyses, and then the three scales combined to form a measure of developmental readiness. An item reduction process in line with recommendations yielded a final DR scale with good model fit and reliability.

6.2 Recommended Procedure

A framework for scale development was proposed by Hinkin (1998). The process involves six steps: (1) item generation, (2) questionnaire administration, (3) initial item reduction, (4) confirmatory factor analysis, (5) convergent and discriminant validity assessment, and (6) replication. The pilot studies conducted in this research were not scale development procedures in the strict sense of the term, therefore only the relevant stages of administration and scale evaluation were applied.

Scales used in both pilot studies were already established. Some of them were on the longer side, though, and were thus expected to be shortened in function of their

reliability and validity properties, and in line with recommendations concerning optimal scale length. Scale length recommendations vary, but recommendations generally advise keeping length short so as to minimise response biases that may occur due to boredom or fatigue (Schmitt & Stults, 1985; Schriesheim & Eisenbach, 1990), especially since adding more items does little to increase reliability, and longer scales may even demonstrate high reliability despite low inter-item correlations (Cortina, 1993). On the other hand, no less than four items per construct is recommended to allow for the domain to be adequately captured (Harvey, Billings, & Nilan, 1985). Hinkin (1998) suggests aiming for four to six items for most constructs.

The first step in the process was questionnaire administration. Administration should target a sample representative of the populations of interest. For both the studies conducted, a working sample was needed, thus working people above eighteen years of age were targeted from as many countries, backgrounds, and positions, as were attainable. The scales under study are also recommended to be administered with other established measures in order to assess the nomological network (Hinkin, 1998), if possible from multiple sources to avoid common method bias. It was not possible to collect additional measures since the scales were already too long and a large sample was needed within tight time constraints. Multi-source data was not possible either. Sample sizes of at least 200 were targeted (Hoelter, 1983), ultimately aiming for at least a 1:4 (Rummel, 1970) and ideally a 1:10 (Schwab, 1980) item to response ratio, since both exploratory and confirmatory factor analysis are sensitive to sample size (Hinkin, 1998).

Once the data is collected, the first step is to conduct exploratory factor analyses to assess structure and for item reduction purposes. Principal axis factoring is

generally recommended (Ford, MacCallum, & Tait, 1986; Rummel, 1970) and was used along with an orthogonal rotation such as varimax, as recommended by Hinkin (1998). Decisions concerning retention and deduction of items were based on theoretical justifications. Only items that clearly loaded on a factor were retained, according to the .40 cut-off level recommended by Ford et al. (1986). Next, internal consistency or reliability assessment is conducted, since it is a necessary condition for validity (Nunnally, 1978), using the widely accepted Cronbach's Alpha (Price & Mueller, 1986). Nunnally (1978) recommends a minimum Cronbach's alpha of .70, although somewhat lower levels are sometimes acceptable.

The next step is to use confirmatory factor analyses to confirm internal consistency and content validity. Since both exploratory and confirmatory factor analyses should not be conducted on the same sample, where possible, the sample is split into two random halves (Krzystofiak, Cardy, & Newman, 1988) and analyses conducted on one or the other (exploratory analyses on one half and confirmatory analyses on the other). The quality of the models tested using confirmatory factor analyses are then assessed using goodness of fit indices as well as t-values or modification indices. Finally, replication was not conducted in the pilot study phase, but the main study could be considered a replication of both these pilot studies, where reliability and validity were reassessed.

The two pilot studies were conducted in a similar manner but assessed somewhat differently due to different properties and logistical constraints, while trying to be faithful to Hinkin's (1998) recommendations outlined above. The two studies are both described below.

6.3 Pilot Study 1 – The Leadership Competencies Portfolio

6.3.1 Rationale

The Leadership Competencies Portfolio (or the Executive Profile) was developed by M.W. Grojean (personal communication, May, 2007). The factors (or competencies) were designed to assess executive experience and potential. They represent a competency model, using a 360-degree feedback tool or framework. They measure whether individuals have the broad executive skills needed to succeed in a variety of senior executive positions. These competencies were developed by research sponsored by the U.S. Federal Government in 1997, after extensive investigation of the attributes of successful executives in both private and public sectors. The specific data on the development of the Executive Profile are proprietary information owned by the U.S. government and thus cannot be made available for dissemination. The development and utilisation of the framework as a 360-degree feedback tool represents the work of M.W. Grojean (personal communication, April 7, 2011). No validation data is available either since this was designed as a 360 framework rather than a psychometric measure, but the original tool was revalidated and reissued with some modifications in 2006. In their current form, the factors represent cutting-edge thinking of a pool of organisational psychologists, HR professionals, as well as senior executives across sectors (M.W. Grojean, personal communication, April 8, 2011).

The Executive Profile was also used within the Aston Business School Academic Leadership Development programmes. There are two forms available: a long, detailed form where each competency is assessed with an average of five items, and a shorter form (the Leadership Competencies Portfolio), stating the competency, providing a definition, and asking raters to assess themselves or others (peers,

supervisors, or subordinates). Since the above tool was developed in an organisational setting, and since its psychometric properties had not been assessed in an academic setting (since it was designed as a competency model rather than a psychometric), a pilot study was conducted, described below. The LCP consists of 28 items, each describing a competency in detail (leadership or managerial) and is rated on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. This study's purpose was to examine and confirm the factor structure of the LCP. It was initially meant to be administered as designed, i.e. as a 360-degree feedback tool in the present study. Due to logistical constraints and challenges getting an adequate response rate, it was subsequently tested and then used only as a self-report measure.

6.3.2 Items and Measures

LCP items included a portfolio of 28 leadership and managerial competencies required for leaders and managers in today's workplaces. These included the following competencies: Achieving results, Adaptability, Ambition, Coaching and Development, Conflict Management, Commercial Management, Communication, Goal Setting, Inclusiveness, Innovation, Integrity/Trust, Keeping Others Informed, Knowledge of the Business, Basic Leadership, Motivating and Rewarding, Participation and Delegation, Perseverance, Planning, Relationship Management, Political Savvy and Influence, Problem Analysis & Decision Making, Promotes Teamwork, Self Awareness, Setting Expectations, Staffing, Strategic Leadership, Stress Tolerance, and Time Management. Each competency included a definition such as Integrity/Trust: "has confidence in others, is trusted, considers ethics of decisions, maintains confidentiality, accepts responsibility for mistakes, is consistent". Competencies are rated on a 5-point Likert scale ranging from Strongly Disagree to

Strongly Agree. The complete list of items and definitions can be found in Appendix 6.

One important point to note is that related to self-awareness. Self-awareness here is listed as a leadership competency and is defined as: "understands own strengths and weaknesses, learns from success and failure, seeks feedback on performance and adapts behaviour in response, pursues learning and development". This definition represents a view of self-awareness that captures personal awareness and learning-oriented behaviour, different than the broader meta-competency Self-Awareness discussed in this study. Ideally, one would change the name of the competency in the LCP, but that was decided against to remain faithful to the scale developer and for consistency reasons. The competency Self-Awareness that is a basic tenet of Developmental Readiness in this study includes a wider range of awareness that encompasses the social, behavioural, cognitive, and emotional domains. Self-Awareness here involves consciousness of the various aspects of one's identity, needs, values, and motivations as well as the awareness of the congruency (or lack thereof) of self-perceptions and others' perceptions (Hall, 2004). It means being in touch with one's constitution, tendencies, moods, emotion, and affect (Mirvis, 2008), being aware of the impact and different impressions one has/makes on others, and being able to incorporate information from others into one's behaviour (Moshavi et al., 2003). It entails bringing to the forefront of one's consciousness the drivers that control and influence one's behaviour, and striving to minimise that control (Bourner, 1996). According to Salzen (1998), there are four levels of self-awareness: sensory-motor self-perception, feeling self-perception, emotional self-perception, and cognitive self-perception. Thus Self-Awareness includes but is not restricted to the

competency "self-awareness" that is included in this scale. For this reason, it was retained.

6.3.3 Sample

For issues of study generalizability, the decision was made to reach as diverse a sample of working participants as possible. Thus no particular organisation was targeted for a sample. Rather, the sample consisted of a random working sample of 336 participants from different countries (UK, US, Canada, Lebanon, and Europe). Participants were contacted via email, mailing lists, social networks, and such electronic means. Thus the number actually contacted was unknown. The only requirement was that they be over 18 years of age and working. To preserve anonymity, respondents were only asked for their names and email addresses if they wished to be included in a draw on an IPod Nano, offered as a token of thanks. A rough estimate of response rate, assuming around 500 people were reached would be 67.2%. If a thousand people were reached then the percentage would drop to 33.6%.

In terms of demographic profile, the sample of 336 participants was 41.02% male, 55.69% female, the rest undeclared. 77.55% of the sample was below and 19.47% above 35 years of age. 66.47% had a Bachelor's degree or less, while 30.24% had a Master's degree or equivalent or more. 72.46% had up to four years' work experience, while 20.36% had more than four years' experience.

6.3.4 Analytic Procedures

Since this is the first such validation of the LCP, an exploratory factor analysis was conducted to assess the LCP's factor structure. The sample of 336 responses was large enough to be randomly split into two groups of 168 each. An EFA was

conducted on the first half and a CFA on the second half. Sample size allowed for a

6:1 subject to item ratio when using the two 50% random splits.

6.3.5 Descriptive Statistics and Correlations

Table 6 presents means, medians, standard deviations, standard error, and

variance for each item in the LCP scale. Inter-item correlations are presented in a

separate table (Table 7) due to space constraints. Items were all (with the exception of

one pair) significantly correlated with each other. Due to the nature of the scale (each

item measuring a particular competency, all of which together make for leadership

competence, rather than all items measuring a single construct like efficiency for

example, items were not expected to all correlate highly (above the recommended .40;

Kim & Mueller, 1978)) with each other. Thus it is acceptable that they significantly

correlate even if not very highly. On the other hand, none of the correlations were too

high as to suggest redundancy, which was also expected since the items measure

distinct competencies.

Table 6 - Descriptive Statistics for the LCP

	M	Median	SD	SE	Variance
Achieving results	4.01	4.00	0.89	0.05	0.79
Adaptability	4.05	4.00	0.98	0.05	0.96
Ambition	3.96	4.00	1.07	0.06	1.15
Coaching and Development	3.99	4.00	1.10	0.06	1.21
Conflict Management	3.98	4.00	1.00	0.05	1.00
Commercial Management	3.80	4.00	1.38	0.08	1.91
Communication	3.85	4.00	1.12	0.06	1.24
Goal Setting	3.87	4.00	1.11	0.06	1.23
Inclusiveness	3.88	4.00	1.06	0.06	1.12
Innovation	3.92	4.00	1.10	0.06	1.22
Integrity/Trust	4.32	4.00	0.90	0.05	0.82
Keeping Others Informed	4.16	4.00	0.98	0.05	0.95
Knowledge of the Business	3.87	4.00	1.17	0.06	1.37
Basic Leadership	4.09	4.00	1.03	0.06	1.05
Motivating and Rewarding	4.26	4.00	0.94	0.05	0.89
Participation and Delegation	3.98	4.00	1.04	0.06	1.09
Perseverance	4.02	4.00	1.04	0.06	1.07
Planning	3.97	4.00	1.09	0.06	1.19
Relationship Management	4.24	4.00	0.89	0.05	0.80
Political Savvy and Influence	3.69	4.00	1.18	0.06	1.38
Problem Analysis & Decision Making	3.92	4.00	1.01	0.05	1.01
Promotes Teamwork	4.13	4.00	0.92	0.05	0.85
Self Awareness	4.20	4.00	0.97	0.05	0.94
Setting Expectations	3.95	4.00	1.09	0.06	1.20
Staffing	4.13	4.00	1.36	0.07	1.85
Strategic Leadership	3.88	4.00	1.23	0.07	1.52
Stress Tolerance	3.90	4.00	1.10	0.06	1.21
Time Management	3.76	4.00	1.24	0.07	1.54

Table 7 - Inter-Item Correlations for the LCP Scale

	1	2	3	4	5	6	7	8	9	10
1.Achieves results	1.00									
2.Adaptability	0.19**	1.00								
3.Ambition	0.35**	0.30**	1.00							
4.Coaching and Development	0.26**	0.23**	0.21**	1.00						
5.Conflict Management	0.19**	0.29**	0.24**	0.44**	1.00					
6.Commercial Management	0.27**	0.13*	0.23**	0.33**	0.35**	1.00				
7.Communication	0.20**	0.25**	0.31**	0.34**	0.30**	0.30**	1.00			
8.Goal Setting	0.34**	0.28**	0.31**	0.23**	0.25**	0.27**	0.29**	1.00		
9.Inclusiveness	0.14*	0.28**	0.19**	0.26**	0.37**	0.25**	0.22**	0.39**	1.00	
10.Innovation	0.25**	0.25**	0.33**	0.27**	0.34**	0.25**	0.22**	0.38**	0.33**	1.00
11.Integrity/Trust	0.21**	0.32**	0.25**	0.21**	0.30**	0.13*	0.28**	0.20**	0.28**	0.19**
12.Keeping Others Informed	0.29**	0.17**	0.21**	0.25**	0.25**	0.21**	0.19**	0.30**	0.29**	0.28**
13.Knowledge of the Business	0.23**	0.18**	0.20**	0.29**	0.26**	0.33**	0.34**	0.34**	0.25**	0.30**
14.Basic Leadership	0.36**	0.22**	0.37**	0.37**	0.28**	0.27**	0.41**	0.36**	0.28**	0.31**
15.Motivating and Rewarding	0.29**	0.33**	0.31**	0.33**	0.36**	0.27**	0.28**	0.37**	0.23**	0.36**
16.Participation and Delegation	0.29**	0.23**	0.18**	0.21**	0.24**	0.25**	0.18**	0.32**	0.26**	0.25**
17.Perseverance	0.25**	0.23**	0.29**	0.20**	0.17**	0.14**	0.18**	0.20**	0.25**	0.26**
18.Planning	0.36**	0.29**	0.36**	0.12*	0.10	0.15**	0.20**	0.33**	0.23**	0.18**
19.Relationship Management	0.13*	0.32**	0.15**	0.25**	0.29**	0.19**	0.22**	0.23**	0.27**	0.17**
20.Political Savvy and Influence	0.33**	0.25**	0.33**	0.33**	0.30**	0.35**	0.27**	0.35**	0.24**	0.34**
21.Problem Analysis & Decision Making	0.25**	0.26**	0.31**	0.20**	0.30**	0.23**	0.29**	0.27**	0.22**	0.31**
22.Promotes Teamwork	0.32**	0.23**	0.26**	0.30**	0.36**	0.25**	0.27**	0.26**	0.31**	0.28**
23.Self Awareness	0.30**	0.39**	0.18**	0.31**	0.17**	0.17**	0.24**	0.30**	0.28**	0.29**
24.Setting Expectations	0.27**	0.23**	0.27**	0.23**	0.20**	0.25**	0.17**	0.35**	0.24**	0.30**
25.Staffing	0.29**	0.20**	0.15**	0.23**	0.28**	0.40**	0.25**	0.31**	0.22**	0.28**
26.Strategic Leadership	0.27**	0.21**	0.28**	0.27**	0.23**	0.33**	0.25**	0.42**	0.25**	0.28**
27.Stress Tolerance	0.22**	0.34**	0.31**	0.21**	0.28**	0.16**	0.24**	0.22**	0.27**	0.12*
28.Time Management	0.38**	0.21**	0.29**	0.09	0.10	0.10	0.14**	0.23**	0.16**	0.13*

**. Correlation is significant at the 0.01 level (2-tailed).   *. Correlation is significant at the 0.05 level (2-tailed).

Table 7 - Inter-Item correlations for the LCP scale (continued)

	11	12	13	14	15	16	17	18	19
11.Integrity/Trust	1.00								
12.Keeping Others Informed	0.39**	1.00							
13.Knowledge of the Business	0.17**	0.34**	1.00						
14.Basic Leadership	0.27**	0.30**	0.28**	1.00					
15.Motivating and Rewarding	0.23**	0.39**	0.28**	0.47**	1.00				
16.Participation and Delegation	0.21**	0.30**	0.23**	0.32**	0.39**	1.00			
17.Perseverance	0.29**	0.29**	0.19**	0.36**	0.31**	0.32**	1.00		
18.Planning	0.24**	0.31**	0.28**	0.30**	0.26**	0.35**	0.27**	1.00	
19.Relationship Management	0.22**	0.24**	0.24**	0.23**	0.39**	0.36**	0.17**	0.24**	1.00
20.Political Savvy and Influence	0.19**	0.29**	0.40**	0.33**	0.37**	0.36**	0.21**	0.27**	0.29**
21.Problem Analysis & Decision Making	0.22**	0.20**	0.35**	0.30**	0.40**	0.21**	0.28**	0.24**	0.23**
22.Promotes Teamwork	0.34**	0.33**	0.28**	0.39**	0.46**	0.44**	0.37**	0.25**	0.46**
23.Self Awareness	0.28**	0.27**	0.23**	0.27**	0.32**	0.33**	0.35**	0.26**	0.34**
24.Setting Expectations	0.22**	0.35**	0.25**	0.34**	0.40**	0.46**	0.26**	0.38**	0.22**
25.Staffing	0.22**	0.35**	0.29**	0.31**	0.39**	0.35**	0.21**	0.20**	0.32**
26.Strategic Leadership	0.13*	0.32**	0.31**	0.40**	0.40**	0.32**	0.28**	0.29**	0.30**
27.Stress Tolerance	0.25**	0.17**	0.19**	0.24**	0.29**	0.29**	0.32**	0.33**	0.34**
28.Time Management	0.19**	0.25**	0.25**	0.22**	0.28**	0.24**	0.23**	0.45**	0.23**

**. Correlation is significant at the 0.01 level (2-tailed).   *. Correlation is significant at the 0.05 level (2-tailed).

Table 7 - Inter-Item correlations for the LCP scale (continued)

	20	21	22	23	24	25	26	27	28
20.Political Savvy and Influence	1.00								
21.Problem Analysis & Decision Making	0.39**	1.00							
22.Promotes Teamwork	0.32**	0.32**	1.00						
23.Self Awareness	0.29**	0.30**	0.43**	1.00					
24.Setting Expectations	0.33**	0.27**	0.37**	0.30**	1.00				
25.Staffing	0.31**	0.24**	0.40**	0.28**	0.44**	1.00			
26.Strategic Leadership	0.38**	0.28**	0.33**	0.30**	0.47**	0.52**	1.00		
27.Stress Tolerance	0.26**	0.35**	0.28**	0.28**	0.26**	0.18**	0.29**	1.00	
28.Time Management	0.29**	0.34**	0.24**	0.23**	0.32**	0.20**	0.22**	0.35**	1.00

**. Correlation is significant at the 0.01 level (2-tailed).   *. Correlation is significant at the 0.05 level (2-tailed).

6.3.6 Exploratory Factor Analyses

The next step was to conduct Exploratory Factor Analyses. Principal Axis Factoring initially yielded a 6-factor structure. Scrutinising the scree plot suggested a one, two, or four-factor solution, though. One, two, three, and four-factor solutions were forced using Principal Axis Factoring and both Oblimin and Varimax rotations wherever possible. The two and four factor solutions worked best, but eigenvalues suggested a four-factor solution to be better. A look at item groupings under each factor told a different story, though. Groupings appear to be random rather than having any theoretically plausible explanation. Results from the four-factor solution are first presented.

Through an iterative process, scale reduction was conducted, removing items whose loadings were less than the .40 cut-off (Ford et al., 1986), 13 items were dropped and 15 retained. These accounted for 42.22% of the variance. Tables 8 and 9 show initial and final factor loadings.

When items are dropped, this practically means that distinct competencies are being dropped from the scale. Leadership competencies cannot be represented by only a few since the domain is varied, complex, and spans diverse situations and contexts. Thus the case seems to be strong for adopting a different solution. The two-factor solution also did not make sense in terms of item groupings or variance explained, whereas the one-factor solution made sense both theoretically and empirically. The scree plot and eigenvalues (8.53 for the first factor, 1.94 for the second factor) also confirmed the plausibility of this choice. Therefore the one-factor solution is presented next.

Table 8 - Factor loadings for the initial four-factor solution of the LCP.

Rotated Factor Matrix

	Factor			
	1	2	3	4
Staffing	.628			
Setting Expectations	.541			
Strategic Leadership	.533			
Motivating and Rewarding	.502			.408
Keeping Others Informed	.472			
Goal Setting	.470			
Basic Leadership	.449		.409	
Political Savvy and Influence	.400			
Innovation	.357		.320	
Planning		.639		
Time Management		.622		
Ambition		.569	.323	
Problem Analysis & Decision Making		.476		
Stress Tolerance		.458		.378
Adaptability		.408		.369
Achieves results	.376	.396		
Perseverance	.340	.394		
Conflict Management			.684	.339
Coaching and Development			.543	
Communication			.543	
Commercial Management	.378		.535	
Inclusiveness			.361	
Knowledge of the Business	.336		.356	
Relationship Management				.759
Promotes Teamwork	.328			.620
Self Awareness				.500
Participation and Delegation	.457			.488
Integrity/Trust				

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalisation.

Table 9 - Factor loadings for the final four-factor solution of the LCP.

	Factor			
	1	2	3	4
Coaching and Development	.585			
Conflict Management	.552			
Communication	.524			
Basic Leadership	.471			
Commercial Management	.451			
Planning		.661		
Time Management		.577		
Ambition		.495		
Stress Tolerance		.418		
Staffing			.721	
Strategic Leadership			.577	
Setting Expectations			.517	
Relationship Management				.630
Promotes Teamwork				.535
Self Awareness				.422

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalisation.

Table 10 presents the initial item loadings on the single factor. As is evident from the table, item loadings are all above .40, with the exception of Integrity/Trust, which had a loading of .38, very close to the .40 cut-off value. Thus all of the items were retained, pending a confirmatory factor analysis.

The decision was made to go ahead with analysing both the four and one-factor solutions for a more reliable decision to be made. The next step was to assess reliability (Hinkin, 1998; Gerbing & Anderson, 1988).

Table 10 - Factor loadings for the initial one-factor solution of the LCP.

Factor Matrix

Motivating and Rewarding	.701
Relationship Management	.647
Promotes Teamwork	.646
Staffing	.618
Achieves results	.601
Basic Leadership	.584
Political Savvy and Influence	.583
Strategic Leadership	.581
Self Awareness	.567
Setting Expectations	.554
Participation and Delegation	.536
Conflict Management	.520
Perseverance	.512
Problem Analysis & Decision Making	.512
Keeping Others Informed	.510
Goal Setting	.509
Stress Tolerance	.494
Planning	.491
Time Management	.491
Commercial Management	.473
Innovation	.468
Adaptability	.462
Coaching and Development	.456
Inclusiveness	.455
Knowledge of the Business	.454
Ambition	.445
Communication	.416
Integrity/Trust	.377

Extraction Method: Principal Axis Factoring.

6.3.7 Reliability

The reliability of the whole 28-item scale (the one-factor solution) was

α=.911, well above the recommended .70 level (Nunnally, 1978). Reliability did not

increase when the slightly lower-loading item (integrity/trust) was deleted. On the

other hand, reliabilities for the four-factor solution were the following: the first factor

(5 items) had an α=.711, the second factor (4 items) had an α=.679, the third factor (3

items) had an α=.730, and the fourth factor (3 items) had an α=.677. Only two of the

factors were above the .70 level, while the other two factors (or subscales) fell below the .70 level. Despite the fact that some scale developers do accept lower alphas, a wiser or more conservative choice would be to stay above .70 since some variability would be expected between different studies, and one would not want a scale that runs a high risk of subsequently falling below the .70 levels. Thus the scale seems to be tipping towards the single factor solution. Nonetheless, confirmatory factor analyses were conducted, testing both solutions.

6.3.8 Confirmatory Factor Analyses

The next step was to test both solutions using confirmatory factor analysis. Analyses were conducted using Amos 16 software on both models (one and four-factor models). Table 11 shows the model fit indexes obtained.

Table 11 - CFA Model Fit Indexes for the two factor solutions

Scale-LCP	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
1-factor model	595.058	350	1.70	.825	.811	.802	.065	.0662
4-factor model	131.625	87	1.51	.921	.904	.910	.055	.0604

CFA on the single-factor model showed acceptable though not ideal model fit, since not all indices were optimal. CFI=.825; TLI=.811; GFI=.802; RMSEA=.065, and SRMR=.0662. Chi-squared was 595.058, with 350 degrees of freedom. Two items (relationship management and time management) loaded below .40, but removing them did not show significant improvement, only a slight one in terms of model fit (CFI=.836; TLI=.822; GFI=.812; RMSEA=.066, and SRMR=.0654). Two items (staffing and strategic leadership) had a high modification index, but it is not theoretically justifiable to remove one or the other since they are not highly related.

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On the other hand, CFA on the four-factor model revealed one item (relationship management) with a low loading. Model fit indices showed good model fit with CFI=.921; TLI=.904; GFI=.910; RMSEA=.055, and SRMR=.0604. Chi-squared was 131.625, with 87 degrees of freedom. Modification indices showed no abnormalities.

As is evident, the four-factor model is superior to the one-factor model in terms of model fit but not reliabilities. As Hu and Bentler (1999) recommended, RMSEA was close to .05, CFI and TLI close to .95, and SRMR was less than 1. As is also evident, the choice is now a tough one since the model with higher reliability has poorer model fit, whereas the one with lower reliability has better model fit. Good model fit, though, does not necessarily imply that the model is theoretically adequate (Williams & O'Boyle, 2011). Theoretical justification, as well as reliability, takes precedence over good model fit, and thus decisions should always be weighed accordingly.

Figures 12 and 13 in Appendix 7 illustrate the two models. The decision was made to go for the one-factor model since the theoretical rationale behind that structure as well as the advantage of having high internal consistency outweigh the delight of having optimal model fit. This is acceptable practice since statistical methods should always follow from sound theoretical bases. Tables 12 and 13 provide the factor loadings for the two models.

Table 12 - Standardised regression weights for the one- factor solution*

			Estimate
Coaching and Development	<---	LCP	.514
Conflict Management	<---	LCP	.484
Commercial Management	<---	LCP	.440
Communication	<---	LCP	.540
Innovation	<---	LCP	.562
Knowledge of the Business	<---	LCP	.559
Basic Leadership	<---	LCP	.632
Political Savvy and Influence	<---	LCP	.608
Adaptability	<---	LCP	.486
Integrity/Trust	<---	LCP	.534
Relationship Management	<---	LCP	.345
Promotes Teamwork	<---	LCP	.619
Self-Awareness	<---	LCP	.515
Setting Expectations	<---	LCP	.608
Staffing	<---	LCP	.490
Strategic Leadership	<---	LCP	.605
Achieves Results	<---	LCP	.416
Ambition	<---	LCP	.558
Time Management	<---	LCP	.391
Motivating and Rewarding	<---	LCP	.623
Participation and Delegation	<---	LCP	.597
Perseverance	<---	LCP	.448
Problem Analysis and Decision Making	<---	LCP	.544
Keeping Others Informed	<---	LCP	.553
Goal Setting	<---	LCP	.655
Stress Tolerance	<---	LCP	.480
Inclusiveness	<---	LCP	.513
Planning	<---	LCP	.527

*Arrows designate factor loadings on latent variables

Table 13 - Standardised regression weights for the four- factor solution*

			Estimate
LC1-	<---	LC	.901
LC2-	<---	LC	.972
LC3-	<---	LC	.766
LC4-	<---	LC	.773
Conflict Management	<---	LC1-	.535
Coaching and Development	<---	LC1-	.577
Communication	<---	LC1-	.589
Commercial Management	<---	LC1-	.467
Relationship Management	<---	LC2-	.363
Promotes Teamwork	<---	LC2-	.684
Self-Awareness	<---	LC2-	.548
Setting Expectations	<---	LC3-	.671
Staffing	<---	LC3-	.689
Strategic Leadership	<---	LC3-	.771
Stress Tolerance	<---	LC4-	.549
Ambition	<---	LC4-	.624
Time Management	<---	LC4-	.482
Planning	<---	LC4-	.583
Basic Leadership	<---	LC1-	.619

*Arrows designate factor loadings on latent variables

6.3.9 Discussion

The purpose of this first pilot study was to examine, validate, and confirm the

Leadership Competencies Portfolio scale, used in 360-degree feedback and self-

reports. Analyses were conducted on a self-report version of the scale. Exploratory

then confirmatory factor analyses were conducted on two random halves of a sample

of 336. Several factor structures were tested. The one-factor model had good

reliability and acceptable model fit. On the other hand, the four-factor model that

emerged from the EFA conducted had low reliabilities for two of the factors. Thus,

based on theoretical suitability, the one-factor model was chosen.

One final note: the LCP is ultimately a higher-order version of the more

extended tool which included several items for each of the competencies measured in

the LCP. Thus in using the LCP and testing its psychometric properties, we are getting to the higher order factors. This may explain the confusion in the factor structure since a different one would have been obtained had these factors been aggregated from the lower level items. Thus using this higher-order scale has reduced some of the variability that would have been obtained with the longer version. Concerning reliability, it is only natural that the more factors (and thus the less items per factor), then the lower the reliability since this is dependent on number of items too. Ultimately, though, this measure is being used in this study as a measure of change, as a dependent variable and not as an independent variable or predictor..

6.4 Pilot Study 2 – Developmental Readiness Scale

6.4.1 Rationale

The operationalisation of Developmental Readiness was one that needed some careful consideration. No direct measure existed and the concept of Developmental Readiness had never been conceptualised as such. Since it is an integration of Self-Awareness, Self-Regulation, and Self-Motivation, then scales of the latter three constructs were combined. One score was required for Developmental Readiness. Based on its conceptualisation, it is expected to be a higher-order construct capturing the three meta-competencies. Thus another pilot study was conducted.

6.4.2 Measures

The rationale behind the choice of the following scales was explained in chapter 5. Self-Motivation was measured using the Motivational Trait Questionnaire – Short form (Heggestad and Kanfer, 2000), discussed in Chapter 5. The MTQ-Short consists of 48 items, rated on a 6-point Likert scale ranging from "very untrue of me" to "very true of me". Self-Awareness was measured using the Revised Self-

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Monitoring Scale - RSMS (Cramer and Gruman, 2002) and the Private Self-Consciousness Scale - Priv-SC (Fenigstein et al.,1975). The RSMS consists of 13 items rated on a 6-point Likert scale ranging from Strongly Disagree to Strongly Agree and the Priv-SC of 10 items rated on a 5-point Likert scale ranging from Extremely Uncharacteristic of me to Extremely Characteristic of me. As for Self-Regulation, it was measured using a short form of the Self-Regulation Questionnaire (Brown et al., 1999) (SSRQ) developed by Carey et al. (2004). The SSRQ consists of 32 items, rated on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree.

Although the above scales are well established and have been used in various studies, and even though the decision was to start out with the full scales, it was expected that many of the items within may need to be excluded because of less relevance to the theoretical concept of DR. Also the need for a measure of optimal length and relevance for data collection purposes is high since DR would rarely be measured alone but with other related concepts depending on the study at hand. The above scales have also been shortened in other studies for various reasons. For example, the self-regulation questionnaire has already been significantly shortened either because of excessive repetition or because of the need for shorter measures for practical purposes. On the other hand, the motivational trait questionnaire, even in its short form, includes underlying dimensions such as personal mastery, competitive excellence, and motivation anxiety, the latter two not being of utmost necessity in defining DR. Thus the final DR scale was expected to be a much shorter version than the original three (actually four) scales combined, originally a total of 103 items.

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6.4.3 Sample

The sample was also a random working sample of 306 participants from different countries (UK, US, Canada, Lebanon, India, and Europe). Participants were contacted via email, mailing lists, social networks, and such electronic means. The only requirement was that they be above 18. Thus the number actually reached was unknown. A rough estimate of response rate, assuming around 500 people were reached would be 61.2%, if a thousand were reached then the response rate would be around 30.6%.

In terms of demographic profile, the sample of 306 participants was 43% male, 57% female. 26.8% of the sample was below 25, 39.9% between 25 and 35, and 33.3% above 35 years of age. 47.4% had a up to a Bachelor's degree, while 52% had an MBA equivalent or more. 46.7% had up to five years' work experience, while 53.3% had more than five years' experience.

6.4.4 Analytic Procedures

Due to the large number of items the sample of 306 was too small to split into two halves to conduct both exploratory and confirmatory factor analyses. Since the scales used were established and validated scales, though, it made sense to conduct only confirmatory factor analyses. Sample size allowed for ratios ranging from 6:1 to 13:1 on the individual self-awareness, self-regulation, and self-motivation scales. Since the latter CFAs resulted in the exclusion of items from the three scales, CFA on the Developmental Readiness combined scale allowed for a 9:1 subject to item ratio. All of these are acceptable and in line with recommendations for sample size discussed above.

6.4.5 Confirmatory Factor Analyses

Before conducting analyses on Developmental Readiness, CFA's were conducted on each sub-dimension's scale alone.

6.4.5.1 Self-Awareness

CFA on Self-Awareness (i.e. the RSMS and PSC, 3 factors) yielded CFI=.840; TLI=.823; GFI=.840; RMSEA=.077; and SRMR=.0850. This shows acceptable (moderate) fit. Some items loaded very weakly on their factors, though, as can be seen from Table 14 below.

Through an iterative process, five items from the PSC scale and one item from the RSMS (AMSP) scale were excluded, yielding a final 3 factor 17 item model with CFI=.940; TLI=.929; GFI=.914; RMSEA=.060; and SRMR=.0504, indicating good model fit. Table 15 summarises the model fit indexes for Self-Awareness, and Figure 14 in Appendix 7 depicts the graphical model adopted.

Lennox and Wolfe (1984) cautioned that the structure of the RSMS was not completely adequate although robust. Results here confirmed their structure, but one item both loaded poorly on its factor and was almost exactly the same as another item (though negatively worded). Thus it was justifiable to exclude it. On the other hand, in the first full model, four items loaded extremely poorly on the PSC factor (all less than .400, one less than .300). In the second model, excluding the four items, one other item loaded poorly (less than .5) and was thus excluded. The exclusion of these 6 items significantly improved model fit, as can be seen in table 15. Though these five items reflect nuances of self-awareness, they are also somewhat repetitive of previous

items or at least included in a more general item. Thus the decision for exclusion was

based not only on statistical grounds, but on theoretical grounds as well.

Table 14 - Standardised Regression weights for the analysis using original author conceptualisation (Self-Awareness)**.

			Estimate
RSMS-*	<---	S-A	.489
PSC-	<---	S-A	.718
AMSP	<---	RSMS-	.730
SEBO	<---	RSMS-	.951
PSC10	<---	PSC-	.291
PSC9	<---	PSC-	.392
PSC8	<---	PSC-	.317
PSC7	<---	PSC-	.371
PSC6	<---	PSC-	.613
PSC5	<---	PSC-	.507
PSC4	<---	PSC-	.797
PSC3	<---	PSC-	.759
PSC2	<---	PSC-	.590
PSC1	<---	PSC-	.623
RSMS1	<---	AMSP	.530
RSMS3	<---	AMSP	.711
RSMS7	<---	AMSP	.709
RSMS9	<---	AMSP	.714
RSMS10	<---	AMSP	.784
RSMS12	<---	AMSP	.433
RSMS13	<---	AMSP	.412
RSMS2	<---	SEBO	.762
RSMS4	<---	SEBO	.669
RSMS5	<---	SEBO	.830
RSMS6	<---	SEBO	.724
RSMS8	<---	SEBO	.701
RSMS11	<---	SEBO	.584

* RSMS = Revised Self-Monitoring Scale
  AMSP = Ability to modify self-presentation (RSMS subscale)
  SEBO = Sensitivity to the expressive behaviour of others (RSMS subscale)
  PSC = Private self-consciousness scale
** Arrows designate loadings of items on their latent variables, and loadings of 1st order latent variables on self-awareness (S-A)

Reliability analysis for the resulting Self-Awareness 17-item scale yielded a

Cronbach's Alpha α=.866, above the recommended .70 or .80 levels. The PSC scale

loaded weakly on self-awareness but since model fit and reliability were good, the decision to retain that scale was made on theoretical grounds, since the PSC captures an aspect of internal self-awareness that the RSMS doesn't.

Table 15 - CFA Model Fit Indexes for the different models of Self-Awareness

Scale-SA	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
3-factor original	646.799	229	2.82	.840	.823	.840	.077	.0850
3-factor final	245.466	116	2.12	.940	.929	.914	.060	.0504

6.4.5.2 Self-Regulation

CFA on Self-Regulation (i.e. the SSRQ, 2 factors as constructed by its authors) yielded CFI=.745; TLI=.727; GFI=.793; RMSEA=.075; and SRMR=.0706. Using an iterative process, 22 items were excluded because of low loading standardised estimates (<.4 or < .5 – see table 16) or high modification indexes. The final model consisted of two factors, with 5 and 4 items respectively, and CFI=.946; TLI=.928; GFI=.957; RMSEA=.069; and SRMR=.0544, indicating good model fit. Since the number of items was low, and one score is typically calculated for self-regulation, a one-factor model was also tested.

The full one-factor model yielded CFI=.720; TLI=.700; GFI=.775; RMSEA=.079; and SRMR=.0699. Using an iterative process, 23 items were excluded because of low loading standardised estimates (<.4 or < .5) or high modification indexes. The final one-factor model consisted of 8 items, and CFI=.973; TLI=.962; GFI=.971; RMSEA=.051; and SRMR=.0370, indicating very good model fit.

Table 16 - Standardised Regression weights for the analysis using original author conceptualisation (Self-Regulation)**.

			Estimate
SSR1-*	<---	SSRQ	.835
SSR2-	<---	SSRQ	.922
SR58	<---	SSR1-	.537
SR57	<---	SSR1-	.561
SR54	<---	SSR1-	.463
SR49	<---	SSR1-	.685
SR47	<---	SSR1-	.658
SR46	<---	SSR1-	.422
SR42	<---	SSR1-	.653
SR41	<---	SSR1-	.359
SR35	<---	SSR1-	.653
SR34	<---	SSR1-	.631
SR32	<---	SSR1-	.479
SR30	<---	SSR1-	.448
SR28	<---	SSR1-	.335
SR27	<---	SSR1-	.331
SR18	<---	SSR1-	.491
SR11	<---	SSR1-	.488
SR1	<---	SSR1-	.615
SR62	<---	SSR2-	.634
SR50	<---	SSR2-	.532
SR45	<---	SSR2-	.473
SR43	<---	SSR2-	.573
SR40	<---	SSR2-	.714
SR33	<---	SSR2-	.688
SR21	<---	SSR2-	.512
SR20	<---	SSR2-	.559
SR19	<---	SSR2-	.419
SR12	<---	SSR2-	.476
SR8	<---	SSR2-	.533
SR6	<---	SSR2-	.632
SR5	<---	SSR2-	.501
SR15	<---	SSR1-	.339

* SSRQ = Self-Regulation
  SSR1 = 1st subscale
  SSR2 = 2nd subscale
  SR# = individual items

** Arrows designate loadings of items on their latent variables, and loadings of 1st order latent variables on self-regulation (SSRQ)

A look at the excluded items revealed very high occurrence of repetitious items, either slightly differently or negatively worded. A few were not very relevant to the DR concept, rather capturing some slight nuances in self-regulation that is unnecessary for the present purposes of the scale. The final items retained are consistent with more recent short versions of the SRQ scale, such as the Self-Regulation Scale (Luszczynska, Diehl, Gutiérrez-Doña, Kuusinen, & Schwarzer, 2004) which captures the dispositional aspect of self-regulation. The items retained focused on the goal attainment and planning aspect of self-regulation, the most relevant to development and readiness.

Table 17 summarises the model fit indexes for Self-Regulation and Figures 15 and 16 in Appendix 7 depict the graphical models. A final decision regarding which model to adopt was left until after the full developmental readiness scale was tested. Reliability analysis for the resulting Self-Regulation 2-factor, 9 item scale yielded a Cronbach's Alpha α=.824, and the 1-factor, 8 item scale yielded a Cronbach's Alpha α=.815, above the recommended .70 or .80 levels.

Table 17 - CFA Model Fit Indexes for the different models of Self-Regulation.

Scale-SR	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
2-factor original	1188.234	434	2.74	.745	.727	.793	.075	.0706
2-factor	66.094	27	2.45	.946	.928	.957	.069	.0544
1-factor original	1262.791	434	2.91	.720	.700	.775	.079	.0699
1-factor	36.011	20	1.80	.973	.962	.971	.051	.0370

6.4.5.3 Self-Motivation

CFA on Self-Motivation (3 factors, each divided into 2 other factors as per the authors' conceptualisation) yielded CFI=.751; TLI=.739; RMSEA=.068; and SRMR=.1027. The Motivation Anxiety subscale loaded extremely poorly on self-

motivation (-.096). Furthermore, the Competitive Excellence subscale also loaded weakly and was excluded subsequently through an iterative process. Since the intent of this study was to look at the more learning and challenge-oriented aspects of motivation, it made sense to exclude these two subscales and retain only the personal mastery subscale (consisting of desire to learn and mastery goals). The latter obviously has a lot of bearing on developmental readiness, in that it captures the motivation to learn and develop inherent in the conceptualisation of DR. The exclusion of these subscales significantly improved model fit, and fit with the conceptual orientation of this study. Table 18 shows the initial factor loadings.

Thus only the Personal Mastery subscale was retained. An iterative process on the PM subscale, eliminating items with low standardised estimates, yielded a 2-factor solution with 3 and 4 items per factor respectively. Model fit indexes were: CFI=.953; TLI=.929; RMSEA=.076; and SRMR=.0411. Again, due to the low number of items and the need for one self-motivation score, a one-factor model was tested, yielding CFI=.919; TLI=.879; RMSEA=.099; and SRMR=.0507.

Thus the two-factor model was adopted, with provision to use the one-factor model in the final analysis if it yields better results since it makes no difference at the theoretical level. Table 19 summarises the model fit indexes for Self-Motivation and Figures 17 and 18 in Appendix 7 depict the graphical models. Reliability analysis for the resulting Self-Motivation 7-item scale yielded a Cronbach's Alpha α=.799, again above the recommended .70 and very near the .80 levels.

Table 18 - Standardised Regression weights for the analysis using original author conceptualisation (Self-Motivation)**.

			Estimate
PM*	<---	MTQ	.811
CE	<---	MTQ	.394
MA	<---	MTQ	-.096
DL	<---	PM	.863
MG	<---	PM	.925
CS	<---	CE	.971
ORG	<---	CE	.810
WOR	<---	MA	.966
Emo	<---	MA	.936
MTQ7	<---	DL	.473
MTQ1	<---	DL	.506
MTQ3	<---	ORG	.309
MTQ9	<---	ORG	.626
MTQ15	<---	ORG	.790
MTQ21	<---	ORG	.404
MTQ27	<---	ORG	.773
MTQ33	<---	ORG	.694
MTQ39	<---	ORG	.556
MTQ4	<---	CS	.701
MTQ28	<---	CS	.870
MTQ34	<---	CS	.727
MTQ23	<---	WOR	.449
MTQ29	<---	WOR	.609
MTQ35	<---	WOR	.698
MTQ40	<---	WOR	.716
MTQ44	<---	WOR	.763
MTQ46	<---	WOR	.762
MTQ48	<---	WOR	.512
MTQ6	<---	Emo	.487
MTQ12	<---	Emo	.537
MTQ18	<---	Emo	.567
MTQ24	<---	Emo	.593
MTQ30	<---	Emo	.565
MTQ45	<---	Emo	.613
MTQ20	<---	MG	.665
MTQ47	<---	Emo	.642
MTQ13	<---	DL	.400
MTQ19	<---	DL	.610
MTQ25	<---	DL	.680
MTQ42	<---	DL	.803
MTQ37	<---	DL	.798

			Estimate
MTQ31	<---	DL	.579
MTQ14	<---	MG	.532
MTQ8	<---	MG	.454
MTQ43	<---	MG	.704
MTQ38	<---	MG	.504
MTQ32	<---	MG	.580
MTQ26	<---	MG	.754
MTQ2	<---	MG	.549
MTQ10	<---	CS	.714
MTQ16	<---	CS	.514
MTQ22	<---	CS	.438
MTQ5	<---	WOR	.643
MTQ11	<---	WOR	.496
MTQ17	<---	WOR	.199
MTQ36	<---	Emo	.461
MTQ41	<---	Emo	.524

* MTQ = Self-motivation
  MTQ# = individual items
  PM = Personal Mastery; subscales DL = desire to learn, MG = mastery goals
  CE = Competitive Excellence; subscales CS = competition seeking, ORG = other referenced goals
  MA = Motivation Anxiety; subscales Wor = worry, Emo = emotionality
**Arrows designate loadings on corresponding latent variables

Table 19 - CFA Model Fit Indexes for the different models of Self-Regulation

Scale-SM	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
3(2) factor original	2578.592	1079	2.39	.751	.739	--	.068	.1003
2-factor - PM	38.778	14	2.77	.953	.929	--	.076	.0411
1-factor - PM	56.220	14	4.02	.919	.879	--	.099	.0507

6.4.5.4 Developmental Readiness

The final step was to test the whole hypothesised structure of developmental readiness, as a higher order construct combining the three dimensions self-awareness, self-regulation, and self-motivation. Three separate courses of action were taken: (1) testing the whole model with original conceptualisations and operationalisations by the scale developers, (2) testing the model based on the CFA results on the individual scales described above with the 2-factor SR and SM solutions, and finally (3) testing

the model based on the CFA results on the individual scales with the 1-factor SR and

SM solutions. Table 20 summarises the model fit indexes for the Developmental

Readiness scale.

The first model, with self-awareness and self-regulation consisting of 2

factors each, and self-motivation having a third-order structure as conceptualised by

its developers, could not be fit to the data even when adding restrictions and

constraints. This may be due to the low ratio of subjects to items (3:1), i.e. small

sample size for that kind of model, and to its complexity. The second model (Model

2), testing the model based on the CFA results on the individual scales described

above with the 2-factor SR and SM solutions, yielded CFI=.906; TLI=.899;

RMSEA=.048; and SRMR=.0657, indicating good model fit. No items were

excluded, yielding the solution depicted in figure 19 in Appendix 7. The third model

(Model 3), testing the model based on the CFA results on the individual scales with

the 1-factor SR and SM solutions yielded CFI=.905; TLI=.897; RMSEA=.049; and

SRMR=.0660, indicating good model fit as well.

Since the items of self-regulation in models two and three were slightly

different, a look at the items that differed was warranted. Two pairs of items were

practically identical, adding only one more item ("I learn from my mistakes") in the

2-factor solution. Thus both could be used, but for the sake of inclusion and due to

higher reliability, the 2-factor solution was finally chosen. Reliability of the final DR

scale was α=.898. Table 21 shows final factor loadings.

Table 20 - CFA Model Fit Indexes for the different factor solutions of DR.

Scale-DR	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
Model 2	840.574	490	1.71	.906	.899	--	.048	.0657
Model 3	797.203	459	1.74	.905	.897	--	.049	.0660

Table 21 - Standardised Regression weights for the final DR Scale.**

			Estimate
SR-*	<---	DevRead	.876
SA-	<---	DevRead	.592
SM-	<---	DevRead	.903
DL	<---	SM-	.935
MG	<---	SM-	.919
AMSP	<---	SA-	.721
SEBO	<---	SA-	.831
P	<---	SA-	.350
SR1-	<---	SR-	.928
SR2-	<---	SR-	.793
MTQ31	<---	DL	.649
MTQ37	<---	DL	.683
MTQ2	<---	MG	.622
MTQ32	<---	MG	.608
MTQ43	<---	MG	.534
MTQ19	<---	DL	.620
MTQ14	<---	MG	.623
PSC6	<---	P	.614
PSC4	<---	P	.813
PSC3	<---	P	.792
PSC2	<---	P	.553
PSC1	<---	P	.631
RSMS2	<---	SEBO	.767
RSMS4	<---	SEBO	.675
RSMS5	<---	SEBO	.833
RSMS6	<---	SEBO	.724
RSMS8	<---	SEBO	.700
RSMS11	<---	SEBO	.592
RSMS1	<---	AMSP	.535
RSMS3	<---	AMSP	.702
RSMS7	<---	AMSP	.705
RSMS9	<---	AMSP	.725
RSMS10	<---	AMSP	.820
RSMS13	<---	AMSP	.720
SR20	<---	SR2-	.565
SR33	<---	SR2-	.744
SR40	<---	SR2-	.815

		Estimate
SR50	<--- SR2-	.432
SR34	<--- SR1-	.584
SR35	<--- SR1-	.631
SR47	<--- SR1-	.669
SR57	<--- SR1-	.492
SR42	<--- SR1-	.711

*DevRead = Developmental Readiness
 SA = Self-Awareness
 SR = Self-Regulation
 SM = Self-Motivation
 DL = desire to learn, MG = mastery goals
 AMSP = Ability to modify self-presentation (RSMS subscale)
 SEBO = Sensitivity to the expressive behaviour of others (RSMS subscale)
 P = Private self-consciousness scale
 SR1 = 1st SR subscale
 SR2 = 2nd SR subscale
**Arrows designate loadings on corresponding latent variables

6.4.6 Discussion

The purpose of this second pilot study was to confirm the hypothesised structure and operationalisation of Developmental Readiness, both as a construct and as a scale that can be used in future research. As is most often the case in scale construction, confirmation, and validation, trade-offs must be sought to optimise validity, reliability, and model fit, thus sacrificing a larger number of items that capture more nuances of a construct but render the scale less reliable, longer, and potentially unusable.

Confirmatory factor analyses confirmed the hypothesised structure of DR, and are a first step in establishing a DR scale that is replicable, generalisable, and valid across a wide number of contexts and situations. Model fit was good, confirming the structure, and reliability was above the recommended .80 level. Future studies should aim to replicate the structure and reliability of the DR scale across various contexts, situations, and cultural settings, in order to confirm findings of this study and to

confirm the validity of the developmental readiness scale across a wider range of contexts, situations, and cultural settings. The final items of the scale can be found in Appendix 9.

6.5 Chapter Summary

This chapter described two separate pilot studies that were conducted to assess the properties of the Leadership Competencies Portfolio and the Developmental Readiness Scale. Exploratory and confirmatory factor analyses were conducted, and internal consistency reliabilities assessed. Scale properties were all acceptable. The next chapters will report the results of the main study using the scales described above.

CHAPTER 7: DATA ANALYSIS, RESULTS, AND FINDINGS – TIME 1

7.1 Chapter Overview

This study sought to understand and explore the concept of Developmental Readiness more fully by looking at its constituents, its predictors, and its effects. In this chapter, the data collected at time 1 is described, tested, and interpreted. First, descriptive statistics are laid out. Next, inferential statistics are conducted and discussed. Finally, all the hypotheses are tested as well as additional ad hoc relationships to further understand the processes involved. Specifically, the role of personality and values in predicting Developmental Readiness was tested, as well as the mediating role of Developmental Readiness between personality and competencies. Furthermore, analyses comparing students versus executives were conducted, as well as post-hoc analyses on DR factors individually.

7.2 Participants

The first executive cohort consisted of 20 participants in the Management Certificate Programme (experimental group). A random sample of 50 managers not taking part in the programme (control group) was also contacted. Each participant was asked to nominate up to five colleagues, subordinates, and supervisors for the 360-degree feedback. In all, 10 participants from the experimental condition and 17 control group participants completed the time 1 questionnaires fully. 132 reviewers completed the feedback. The others completed the questionnaires only partially and thus were excluded from the sample. As for time 2, 8 experimental group and 12 control group participants filled the questionnaire out. Problems arose with the 360-degree feedback, as discussed in chapter 5. The above cohort in particular was very difficult in terms of getting people to actually complete the 2 parts of the

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questionnaire, resulting with some responses that had complete feedback but incomplete self-reports and vice versa. When the decision was made to revert only to self-report data and include a new measure of self-awareness, the whole first cohort was dropped from the sample.

Student and other executive groups were also contacted from Aston University UK, Notre Dame University (Lebanon), and ALBA Graduate Business School (Greece). Other universities were contacted in the Lebanon (American University of Beirut and the Lebanese American University), but samples could not be reached either because of logistical constraints or resistance from gatekeepers. The final sample consisted of 131 executives and 166 students for Time 1. Thus total sample size for time 1 was 297. Estimated participants contacted were a total of 499 including the first cohort that was excluded from the study, yielding a response rate of 65%, and 434 excluding the first cohort, yielding a response rate of 68.43% for time 1. Table 22 outlines the sample distribution for time 1.

Table 22 - Sample Distribution for Time 1

	Source	Group	Experimental	Control	Percentages
Time 1					**Sample: 297**
Executive education	ABS	Group 1	29	19	16.16%
		Group 2	19	0	6.40%
Undergraduates	NDU	Group 1	19	21	13.47%
	ABS	Group 2	23	20	14.48%
Graduate	NDU	Group 1	22	0	7.41%
	ABS	Group 2	17	17	11.45%
	ABS	Group 3	47	0	15.82%
	ALBA	Group 4	44	0	14.81%

*ABS= Aston Business School; NDU= Notre Dame University;
  ALBA= ALBA Graduate Business School

7.3 Descriptive Statistics

Participant distribution was the following: 62 (20.87%) from Lebanon, 44 (14.81%) from Greece, and 191 (64.31%) from the UK. There were 166 (55.89%) students and 131 (44.11%) executives, 219 (73.74%) experimental condition and 78 (26.26%) control. 133 (44.78%) were female, 163 (54.88%) male, and 1 (.34%) undeclared. 93 (31.31%) had a BA, BSc, or equivalent, and 204 (68.69%) were at the graduate level or beyond. 243 (81.82%) were below 35, and 54 (18.18%) were above 35 years of age. 208 (70.03%) had up to 4 years' work experience, and 89 (19.97%) had more than 4 years experience. Table 23 below outlines sample composition for the three studies. Figure 20 in Appendix 8 shows the sample composition by Country, Sample, Age, Education, and Tenure.

Table 23 - A Comparison of Sample Composition Across Studies.

		LCP Pilot	DR Pilot	Main Study (Time 1)
Gender	Male	41.02%	43%	54.88%
	Female	55.69%	57%	44.78%
Education	Up to Bachelor's	66.47%	47.4%	31.31%
	Master's and more	30.24%	52%	68.69%
Age	Below 35	77.55%	66.7%	81.82%
	Above 35	19.47%	33.3%	18.18%
Work	Up to 4-5 years	72.46%	46.7%	70.03%
Experience	5 + years	20.36%	53.3%	19.97%

7.4 Variables

Variables for time 1 were the following (described fully in chapter 5):

- Personality: Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness to Experience (O).

- Values: Conservation (CO), Self-Transcendence (ST), Openness to Change (OC), and Self-Enhancement (SE), Open Orientation (OCSE), and Closed Orientation (COST).

- Desirable Responding (Common Method Factor): BIDR.

- Developmental Readiness (DR) – standardised scores (means) of Self-Awareness (SA), Self-Regulation (SR), and Self-Motivation (SM).

- Leadership Competencies Time 1 (LCT1).

The means and standard deviations for variables are summarised in Table 24 below.

Table 24 - Means, Medians, SDs, SEs, and Variances for Time 1 Variables.

	Mean	S.E.	Median	S.D.	Variance
Extraversion	3.30	0.05	3.25	0.84	0.71
Agreeableness	4.09	0.04	4.00	0.63	0.39
Conscientiousness	3.64	0.04	3.75	0.73	0.54
Neuroticism	2.91	0.05	3.00	0.81	0.66
Openness to Experience	3.71	0.04	3.75	0.64	0.41
Conservation	-0.34[a]	0.03	-0.32	0.47	0.22
Self-Transcendence	0.24	0.03	0.23	0.45	0.20
Openness to Change	0.21	0.03	0.20	0.55	0.30
Self-Enhancement	-0.14[a]	0.04	-0.15	0.70	0.49
Closed Orientation	-0.05[a]	0.02	-0.03	0.31	0.10
Open Orientation	0.03	0.03	0.03	0.44	0.20
BIDR – Desirable Responding	4.30	0.06	4.33	1.01	1.02
Leadership Competencies Time1	3.95	0.02	3.92	0.40	0.16
Self-Awareness	0.00[b]	0.05	0.01	0.81	0.66
Self-Regulation	3.77	0.03	3.78	0.54	0.29
Self-Motivation	4.54	0.04	4.57	0.62	0.39
Developmental Readiness	0.00[b]	0.04	0.05	0.73	0.53

a: composites of standardised variables; b: standardised variables

7.5 Correlational Analyses

Table 25 below presents correlations between variables. Of particular interest were the following: Extraversion (r=.211, p<.01), Agreeableness (r=.437, p<.01), Conscientiousness (r=.307, p<.01), and Openness to Experience (r=.281, p<.01) were positively correlated with Developmental Readiness. On the other hand, Conservation (r= -.200, p<.01) and COST (r=-.155, p<.05) were negatively correlated and OCSE (r=.136 , p<.05) was positively correlated with Developmental Readiness. Leadership Competencies were correlated with E (r=.237, p<.01), A (r=.262, p<.01), C (r=.175, p<.01), O (r=.236, p<.01), and CO (r=-.196, p<.01), OC (r=.124, p<.05), COST (r=-.137, p<.05), and OCSE (r=.120, p<.05). Finally, DR was also positively correlated with competencies (r=.577, p<.01).

Table 25 - Correlations between Time 1 Variables

Scale	Variable	1	2	3	4	5	6	7	8	9	10	11
Personality	1.Extraversion	1.00										
	2.Agreeableness	.184**	1.00									
	3.Conscientiousness	.023	.161**	1.00								
	4.Neuroticism	-.069	.184**	-.016	1.00							
	5.Openness to Experience	.155**	.231**	-.030	.055	1.00						
Values	6. Conservation	-.352**	-.065	.186**	.130*	-.382**	1.00					
	7.Self-Transcendence	-.001	.311**	.001	-.123*	.026	-.085	1.00				
	8.Openness To Change	.287**	-.123*	-.243**	-.079	.317**	-.711**	-.227**	1.00			
	9.Self-Enhancement	.138*	-.088	-.003	.039	.087	-.360**	-.578**	.005	1.00		
	10.COST	-.268**	.174**	.141*	.010	-.271**	.697**	.655**	-.703**	-.689**	1.00	
	11.OCSE	.286**	-.145*	-.152**	-.018	.264**	-.721**	-.593**	.622**	.786**	-.973**	1.00
Developmental	12.Dev. Readiness	.211**	.437**	.307**	.004	.281**	-.200**	-.005	.104	.092	-.155**	.136*
Readiness	13.Self-Awareness	.117*	.520**	.113	.285**	.284**	-.123*	.028	.045	.057	-.072	.073
	14.Self-Regulation	.220**	.231**	.349**	-.189**	.129*	-.126*	-.028	.043	.084	-.116*	.092
	15.Self-Motivation	.147*	.305**	.233**	-.034	.257**	-.213**	-.005	.147*	.070	-.165**	.146*
Competencies	16.Competencies T1	.237**	.262**	.175**	-.111	.236**	-.196**	.016	.124*	.056	-.137*	.120*
BIDR	17.BIDR	.109	-.020	.327**	-.294**	.138*	-.114*	-.030	.012	.101	-.108	.086

*. Correlation is significant at the 0.05 level (2-tailed).   **. Correlation is significant at the 0.01 level (2-tailed).

Table 25 – Correlations between Time 1 Variables (continued)

Scale	Variable	12	13	14	15	16	17
Developmental	12.Dev. Readiness	1.00					
Readiness	13.Self-Awareness	.655**	1.00				
	14.Self-Regulation	.794**	.215**	1.00			
	15.Self-Motivation	.866**	.410**	.566**	1.00		
Competencies	16.Competencies T1	.577**	.336**	.477**	.516**	1.00	
BIDR	17.BIDR	.266**	-.066	.456**	.180**	.209**	1.00

7.6 Scale Properties

7.6.1 Scale Factorial Structure

CFAs were conducted on the scales to ensure that they actually have the structures reported by their authors or found in the pilot studies. Results are summarised in table 26 below.

- Scales were first tested according their authors/developers' conceptualisations. Then models resulting from EFA, CFA, and pilot studies were tested. In some cases additional low loading items were deleted. Analyses were conducted using AMOS software. Recommendations such as Hu and Bentler's (1999) were followed in estimating model fit, for example RMSEA close to .05 providing good model fit, .08 moderate or acceptable, CFI and TLI close to .90 or .95, and SRMR less than .1.

- IPIP: The five-factor correlated model had acceptable model fit. CFI was slightly lower than recommended levels but RMSEA and SRMR were good.

- PVQ: The four-factor correlated model had moderate fit, but when compatible or opposed pairs were taken alone, fit was better. In all cases, models had acceptable fit.

- SR (SSRQ): The 2-factor model resulting from the pilot study had superior fit to the original model. Fit indices were acceptable.

- SM (MTQ): The 2-factor model resulting from the pilot study also had superior fit to the original model. Fit indices were very good.

- SA (RSMS-PSC): The 3-factor model from the pilot study had acceptable fit which was superior to the original model.

- DR: The model resulting from the pilot study had acceptable fit. No further exclusions were made so as not to compromise on validity and reliability.

- LC (Competencies): The one-factor model based on the pilot study had marginal fit, but the exclusion of Time Management and Adaptability resulted in moderate and acceptable fit. Although the two excluded items are conceptually important for leadership, they do not seem to work well empirically, which would justify their exclusion. These are the sort of trade-offs between inclusion and higher reliability and validity that always face researchers.

- BIDR: the original model had poor model fit. EFAs and CFAs were conducted and resulted in adopting only part of the SDE (self-deceptive enhancement) subscale which provided much better model fit. Model fit and the shorter form adopted are in line with results from studies testing the BIDR full scale (c.f. Leite & Beretvas, 2005; Li & Li, 2008) and with newer shorter versions of desirable responding scales (Reynolds, 2006; Stober, Dette, and Musch, 2002; Musch, Brockhaus, and Broder, 2002).

Table 26 - Scale CFA Results

Scale	Factors	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
Personality (International Personality Item Pool)									
IPIP	5 correlated	289.467	160	1.81	.857	.830	.906	.052	.0632
Values (Portrait Values Questionnaire)									
PVQ	4 correlated	1595.310	728	2.19	.754	.736	.784	.063	.0782
	CO-ST corr*	557.452	226	2.47	.792	.767	.857	.070	.0715
	COST factor*	557.612	227	2.46	.792	.768	.857	.070	.0716
	OC-SE corr*	280.286	115	2.44	.890	.869	.899	.070	.0641
	OCSE factor*	306.901	116	2.65	.872	.850	.894	.075	.0789
	CO-OC corr**	631.197	224	2.82	.748	.716	.846	.078	.0829
	COOC factor**	639.737	225	2.84	.744	.712	.845	.079	.0844
	SE-ST corr**	247.008	118	2.09	.906	.892	.908	.061	.0683
	SEST factor**	255.715	119	2.15	.901	.887	.907	.062	.0724

COnservation; **S**elf-**T**ranscendence; **O**penness to **C**hange; **S**elf-**E**nhancement;
Closed Orientation (**COST**); Open Orientation (**OCSE**)

Scale	Factors	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
Self-regulation (Short Self-Regulation Questionnaire)									
SSRQ	Original	1077.804	435	2.48	.760	.743	.811	.071	.0724
	From pilot	74.557	27	2.76	.918	.891	.948	.077	.0563
Self-Motivation (Motivational Trait Questionnaire – Short)									
MTQ	Original	2406.979	1079	2.23	.775	.765	--	.064	.1012
	From pilot	30.556	14	2.18	.962	.943	--	.063	.0402
Self-Awareness (Revised Self-Monitoring Scale & Private Self-consciousness)									
SA	Original	798.617	230	3.47	.739	.713	.790	.091	.0898
	From pilot	307.859	116	2.65	.892	.873	.889	.075	.0656
Developmental Readiness Scale									
DR	From Pilot	1080.454	490	2.21	.822	.808	--	.064	.0740
Leadership Competencies Portfolio									
LCP	1-factor	752.771	350	2.15	.798	.782	.836	.062	.0628
	FINAL (-2 items)	635.294	299	2.12	.823	.807	.850	.062	.0604
	From pilot	776.964	349	2.23	.786	.768	.835	.064	.0668
	(-3 items)	612.809	275	2.23	.815	.798	.851	.064	.0657
Balanced Inventory of Desirable Responding									
BIDR	Original	1411.563	740	1.91	.547	.522	.796	.055	.0748
	From EFA	23.899	9	2.66	.936	.894	.975	.075	.0430

*Compatible values pairs correlated or factored;
**Opposing values pairs correlated or factored

7.6.2 Reliability

The second step was to assess scale reliabilities. Reliability was assessed using PASW (SPSS) 18. Scale reliabilities are reported in Table 27 below. The generally accepted cut-off levels of Cronbach's Alpha in the social sciences is generally .70 or higher (Nunnally, 1978), though in some cases levels as low as .60 or .65, though undesirable (DeVellis, 1991), may be accepted.

Most of the scales used in this study exceed the .70 or .80 levels. The Personality scale (IPIP), though, did not. This may be due to the low number of items per factor (the short version was used). Donnellan et al. (2006) pointed out that limitation of the Mini-IPIP, explaining that the need for a shorter assessment than the IPIP-FFM inventory (Goldberg, 1999) due to practical constraints drove the Mini-IPIP construction, thus giving researchers a shorter scale that had good internal consistency but somewhat lower fit (from a CFA perspective) and reliability. The Mini-IPIP correlates well on the IPIP-FFM scales with very similar patterns of associations, and not too great a sacrifice of predictive validity is being made when using the Mini-IPIP, while acknowledging that construct breadth and reliability are potential limitations of this short form of the measure. This was further confirmed by Cooper, Smillie, and Corr (2010) who concluded that the Mini-IPIP is suitable especially where time or other circumstances allow for only a short number of items, and that its reliability and factor structure are acceptable. In this study model fit is acceptable, reliability is on the low side, but items load well enough on their respective factors. Thus no changes were made to the scale. As for BIDR, higher reliability was sacrificed by shortening the scale, but the optimal trade-off in terms of model fit and reliability was chosen based on this study's data.

Table 27 - Scale Reliabilities

Scale		Number of Items	Cronbach's Alpha
Mini-IPIP		20	.632
	Extraversion	4	.725
	Agreeableness	4	.667
	Conscientiousness	4	.568
	Neuroticism	4	.631
	Openness to Experience	4	.564
PVQ		40	.866
SSRQ		30	.897
	SR after Pilot	9	.776
MTQ		48	.847
	SM after Pilot	7	.784
RSMS-PSC		23	.856
	SA after Pilot	17	.857
DR		33	.882
LCP		28	.891
BIDR		40	.738
	BIDR after CFA	6	.695

7.7 Validity

To control for validity threats from differences in characteristics, a t-test was conducted and no significant differences were found in terms of starting competency levels. As for demographic characteristics, one-way ANOVAs revealed significant differences only w.r.t. education ($F(1,295)=3.858$, $p=.05$), tenure ($F(1,295)=16.708$, $p<.05$), and student/executive status ($F(1,295)=3.891$, $p<.05$). Table 28 shows the percentage distribution between control and intervention groups. Eyeballing the data reveals some group differences, even if not statistically significant.

In terms of the scales used, all of them were chosen to be valid instruments (as per authors' and study reports). Scale structures were tested for using CFAs reported in section 7.6.1 above, confirming the validity of its hypothesised structure. All scales reported high inter-item correlations, confirming their convergent validity. As for

discriminant validity, intercorrelations between different scale items were all low and non-significant, except for a few items that are expected to be correlated or where scales measure constructs that are expected to be related theoretically. Thus the scales used in this study show evidence of construct validity, consistently with their authors' reported psychometrics.

Table 28 - Percentage Distribution of Demographics for Control vs. Intervention Groups.

		Control	Intervention
Country	**Lebanon**	26.9%	18.7%
	Greece	0%	20.1%
	UK	73.1%	61.2%
Student/Executive	**Students**	65.4%	52.51%
	Executives	34.6%	47.49%
Previous Training	**Previous Training**	33.3%	38.8%
	No Previous Training	66.7%	61.2%
Sex	**Female**	52.56%	42%
	Male	47.44%	57.5%
Age	**Below 35 years**	75.6%	82.2%
	Above 35 years	24.4%	17.8%
Education	**BA-BS**	94.9%	86.8%
	MA-MS-MBA	5.1%	13.2%
Tenure	**Up to 5 years**	46.15%	22.4%
	5+ years	53.85%	77.6%

7.8 Common Method Variance

Since only self-report data was collected, the possibility of common method bias and desirable responding was present. Two methods were used to control for common method variance. The first was in line with Podsakoff et al.'s (2003) recommendation to control for the effect of a directly measured latent methods factor, in this case BIDR, by including it in a CFA with the whole measurement model. The second method was Harman's one-factor test (Harman, 1967; Podsakoff & Organ, 1986).

First, CFAs were conducted to control for common method variance using one of the techniques proposed by Podsakoff et al. (2003). Model fit was better for three of the five fit indices without the common method factor (table 29), thus indicating that common method variance should not pose a big problem.

Table 29 - Testing for Common Method Variance.

Model	χ^2	df	χ^2/df	CFI	TLI	GFI	RMSEA	SRMR
Measurement Model with BIDR	300.113	96	3.13	.908	.836	.910	.085	.0707
Measurement Model w/o BIDR	128.234	20	6.41	.940	.767	.939	.135	.0553

To further confirm the above conclusion, a Harman's one-factor test was performed (Harman, 1967; Podsakoff and Organ, 1986), a widely used technique for addressing common method variance (Cohen & Shamai, 2010; Podsakoff et al., 2003). All items of personality, values, competencies, developmental readiness, and BIDR scales were entered into a factor analysis using principal axis factoring with Varimax rotation. Results yielded a 32 factor solution (eigenvalues greater than one) accounting for 56.27% of the variance. The first factor only accounted for 12% of the variance and did not include any BIDR items. The scree plot suggested a 7 or 13 factor solution. Forcing a one-factor solution first using principal components factoring yielded a factor that only explains around 11% of the variance, then using a principal axis factoring yielded a factor that only explained 10% of the variance. Only a few BIDR items were included in that factor. Scree plots still suggested at least 7 or 8 factors. These results further confirmed the absence of a common method factor that may mask effects.

7.9 Inferential Statistics

As a first step, independent samples t-tests were run on the whole sample to explore differences with respect to the different control variables and the different groups. Only differences with respect to the different dependent variables (DR, Competencies, as well as the three DR dimensions) were explored. The reason for analysing these was two-fold: in terms of students and executives as well as experimental/control condition, hypotheses proposed are directly relevant to these, thus it is necessary to explore these differences before going on to other analyses. In terms of the other control variables, though not entirely necessary at this stage, it would be useful and interesting to have an initial idea of whether any differences exist relevant to age, sex, country, tenure, education, and previous training. The rationale for including these particular control variables was discussed in chapter 5.

T-tests comparing the **student and executive** groups revealed significant differences between groups regarding Competencies and self-regulation. Table 30 summarises the results. Hypothesis 2a suggested that students will have lower levels of competency than executives. The significant difference between the two groups on competency levels provides evidence that hypothesis 2a is supported.

Table 30 - t-test results for the student vs. executive groups.

Variable	Levels	Mean	SE	t	df	p	r
LCT1	Student	3.88	.03	-3.132	295	.002	.18
	Executive	4.02	.03				
SR	Student	3.69	.04	-2.704	295	.007	.16
	Executive	3.86	.05				

Comparing the **student and executive Experimental** groups only revealed significant differences between groups regarding Competencies. Table 31 summarises the results.

Table 31 - t-test results for the student vs. executive experimental (LD) groups.

Variable	Levels	Mean	SE	*t*	*df*	p	*r*
LCT1	Student LD	3.89	.04	-2.622	217	.009	.18
	Executive LD	4.03	.04				

T-tests comparing the **LD (experimental condition) and control** groups only revealed significant differences between groups regarding self-awareness, self-motivation, and DR. Table 32 summarises the results. Thus it is notable that the treatment groups did not differ on competency levels, but did differ on DR in the pre-test condition.

Table 32 - t-test results for the experimental (LD) and control groups.

Variable	Levels	Mean	SE	*t*	*df*	p	*r*
SA	Control	-.20	.10	-2.542	295	.012	.15
	LD	.07	.05				
SM	Control	4.36	.08	-2.918	295	.004	.17
	LD	4.60	.04				
DR	Control	-.22	.09	-3.144	295	.002	.18
	LD	.08	.05				

As for the other control variables, t-tests comparing the **two age groups (below and above 35)** only revealed significant differences between groups regarding self-awareness. t-tests comparing the **groups by education level (up to BA or MA and beyond)** only revealed significant differences between groups regarding Competencies. Comparing the **groups by tenure (up to 5 or 5 years and more)** revealed no significant differences between groups regarding any of the dependent variables. t-tests comparing those having had **previous training (PT)** with those who

hadn't (**NPT**) only revealed significant differences between groups regarding competencies and self-awareness. Finally, t-tests comparing **females and males** only revealed significant differences between groups regarding self-awareness. Table 33 summarises all the results.

Table 33 - t-test results for the different control variables.

Control	Variable	Levels	Mean	SE	*t*	*df*	p	*r*
Age	SA	Below 35	.10	.05	3.688	74.817	.000	.39
		Above 35	-.40	.13				
Education	LCT1	BA	3.92	.02	-2.727	295	.007	.16
		MA	4.12	.07				
Previous Training	LCT1	PT	4.03	.04	2.684	295	.008	.15
		NPT	3.90	.03				
	SA	PT	-.13	.09	-2.020	192.056	.045	.14
		NPT	.08	.05				
Sex	SA	Female	.1882	.06873	3.675	294	.000	.21
		Male	-.1540	.06268				

Additionally, one-way ANOVAs were conducted to test for differences regarding country and sample. Sample included student experimental (115), student control (51), executive experimental (104), and executive control (27) groups. Country included the Lebanon, U.K., and Greece. Results showed a significant effect of sample group with respect to competencies ($F_{(3,293)}$=3.443 , p<.05), self-awareness ($F_{(3,293)}$= 6.408, p<.0005), self-regulation ($F_{(3,293)}$=3.514 , p<.05), self-motivation ($F_{(3,293)}$=3.038 , p<.05), and developmental readiness ($F_{(3,293)}$=3.502, p<.05). On the other hand, no significant effect of Country was found with respect to the dependent variables.

Post hoc power analyses using G*Power software discussed in chapter 5 (Faul et al., 2007, 2009) for all the above t-tests and ANOVAs for the different groups revealed adequate power, ranging from .91 to .99.

7.10 Hypothesis testing

Hypotheses 4 and 5 predicted associations between personality dispositions and Developmental Readiness, and higher-order value types and Developmental Readiness. To test for hypotheses 5 and 6, multiple regressions were used. In all cases, experimental condition, tenure, country, sex, education, age, previous training, sample, and student or executive were controlled for.

7.10.1 Personality and Developmental Readiness

Hypothesis 4: personality dispositions predict individuals' developmental readiness such that:

a. i. Neuroticism has a curvilinear relationship with Developmental Readiness such that mid-level N will be positively associated with Developmental Readiness and high/low N negatively associated with Developmental Readiness.

   ii. if not (i), then Neuroticism will be negatively related to the Developmental Readiness of an individual.

b. No direct relationship between Extraversion and Developmental Readiness is expected.

c. Openness to Experience is positively associated with Developmental Readiness.

d. Agreeableness is positively related to Developmental Readiness.

e. Conscientiousness is positively associated with Developmental Readiness.

To test for Hypothesis 4a(i), i.e. a curvilinear relationship, an ordinary multiple regression was conducted using both the linear (N) and the curvilinear (powered – N^2) predictors (Cohen et al., 2003; Pedhazur, 1997). These were carried out in subsequent steps. As can be seen in table 34 below, no significant relationships emerged, and thus hypothesis 4a(i) was not supported.

Table 34 - Regression Results for Hypothesis 4a(i).

		Block 1	**Block 2**	**Block 3**
Control	Greece	.014	.013	.011
	UK	-.103	-.109	-.109
	STU or EXEC	.092	.083	.078
	LD or Control	.127	.125	.126
	ExecLD	.037	.045	.054
	Previous Training	.001	.001	.003
	Sex	-.110	-.118	-.113
	Education	.031	.029	.015
	Age	-.055	-.056	-.065
	Tenure	.059	.060	.062
Personality	Neuroticism		-.032	-.589
	N squared			.562
	R^2	.026	.024	.030
	F	1.793	1.651	1.759
	ΔR^2		.001	.009
	F for ΔR^2		.275	2.829

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Developmental Readiness

To test for hypotheses 4a(ii), 4b, 4c, 4d, and 4e: since personality dispositions work in conjunction with each other (i.e. a person is high on some, mid-level on others, and low on yet others simultaneously), one multiple regression was conducted, entering all personality variables in one block. Neuroticism showed no significant relationship with Developmental Readiness but was in the right direction (negatively related), thus hypothesis 4a(ii) was not supported. As expected, extraversion did not impact Developmental Readiness significantly (β=.088, p>.05), so hypothesis 4b is supported. As for Openness to Experience (β=.188, p<.001), Agreeableness (β=.343,

p<.001), and Conscientiousness (β=.251, p<.001), they were significantly and

positively related to Developmental Readiness, thus supporting hypotheses 4c, 4d,

and 4e. All in all, personality variables explained about 30% of the variance in

Developmental Readiness (r=.297, p<.001). None of the included control variables

had any significant effects, contrary to expectations. Results are summarised in table

35.

Table 35 - Results of Regression Analysis (Hypothesis 4 – Personality).

		Block 1	Block 2
Control	Greece	.014	-.012
	UK	-.103	-.101
	STUEX	.092	.073
	LDCtrl	.127	.057
	ExecLD	.037	.071
	Previous Training	.001	-.011
	Sex	-.110	-.021
	Education	.031	-.036
	Age	-.055	-.056
	Tenure	.059	.023
Personality	Extraversion		.088
	Agreeableness		.343***
	Conscientiousness		.251***
	Neuroticism		-.075
	Openness to Experience		.188***
	R^2	.026	.297
	F	1.793	9.350***
	ΔR^2		.274
	F for ΔR^2		23.081***

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: DR

7.10.2 Values and Developmental Readiness

Hypothesis 5: individual value priorities predict individuals' developmental

readiness such that:

    a. Self-Enhancement will be positively related to Developmental Readiness.

b. Openness to Change will be positively related to Developmental Readiness.

c. Self-Transcendence will be negatively related to Developmental Readiness.

d. Conservation will be negatively related to Developmental Readiness.

e. Closed Orientation (COST) will be negatively related to Developmental Readiness.

f. Open Orientation (OCSE) will be positively related to Developmental Readiness.

Now according to the circumplex structure confirmed by Schwartz and colleagues in their extensive research on values (see figure 7 in chapter 4), OC and CO are opposed and SE and ST are opposed. Correlations between two pairs of adjacent factors (OC and ST; CO and SE) are high. Thus it would not be fitting to use them together as independent variables in a regression since results will be due to statistical artefacts rather than actual effects. Thus compatible pairs (OC and SE; ST and CO) were analysed together in separate regressions to test for hypotheses 5a through 5d. Surprisingly, only Conservation (β=-.188, p<.001) was significantly negatively related to Developmental Readiness, thus only providing support for hypothesis 5d.

As for hypotheses 5e and 5f, as described in chapter 4, since compatible pairs work in the same direction, one variable (closed and open orientation) was calculated for CO and ST (COST) and OC and SE (OCSE) respectively. This operationalisation

was confirmed by a multidimensional scaling (MDS) analysis using ALSCAL (SPSS). CO and ST and OC and SE respectively clustered on either side of the two-dimensional space. Closed Orientation (COST) was significantly negatively related (β=-.147, p<.05) to DR thus providing support for hypothesis 5e, and Open Orientation (OCSE) was significantly positively related (β=.131, p<.05) to DR. Thus hypothesis 5f was supported. Of the control variables, only sex (or gender) had a significant effect on DR. Results for all regressions are summarised in table 36.

Table 36 - Results of regression analyses (Hypothesis 5 – Values).

		Block 1	**Block 2**	**Block 2**	**Block 2**	**Block 2**
Control	Greece	.014	.015	-.007	.016	.014
	UK	-.103	-.100	-.091	-.093	-.099
	STUEX	.092	.128	.142	.128	.129
	LDCtrl	.127	.130	.131	.128	.129
	ExecLD	.037	.000	-.006	.000	.000
	Previous Training	.001	.012	.024	.016	.013
	Sex	-.110	-.126*	-.122*	-.128*	-.126*
	Education	.031	.038	.026	.038	.038
	Age	-.055	-.044	-.052	-.044	-.044
	Tenure	.059	.056	.056	.054	.056
Values 1	Openness to Change		.077			
	Self-Enhancement		.105			
2	Conservation			-.188***		
	Self-Transcendence			-.024		
3	COST (Closed)				-.147*	
4	OCSE (Open)					.131*
	R^2	.026	.036	.054	.044	.040
	F	1.793	1.925*	2.408**	2.239*	2.107*
	ΔR^2		.016	.033	.021	.016
	F for ΔR^2		2.492	5.219**	6.362*	4.996*

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: DR

7.10.3 Personality Dispositions and Competencies

Hypothesis 6: Personality dispositions will predict the competency level of individuals such that:

Hypotheses 6a, b, c, d: Extraversion, Agreeableness, Conscientiousness, and

Openness to Experience will be positively associated with the competency

level of individuals.

Hypothesis 6e: Neuroticism will be negatively associated with the

competency level of individuals.

All personality dispositions significantly predicted competency level except

for Neuroticism. E (β=.154, p<.01), A (β=.238, p<.001), C (β=.134, p<.05), and O

(β=.156, p<.01) were positively associated with competencies, thus supporting

hypotheses 6 a, b, c, and d but not 6e. Of the control variables, only the UK sample

showed a significant effect. Results are displayed in table 37.

Table 37 - Results of Regression Analysis (Hypothesis 6 – Personality on Competencies).

		Block 1	Block 2
Control	Greece	-.075	-.104
	UK	-.168*	-.168*
	STUEX	.102	.086
	LDCtrl	.000	-.046
	ExecLD	.031	.052
	Previous Training	-.102	-.101
	Sex	.045	.096
	Education	.102	.046
	Age	.005	.014
	Tenure	.081	.050
Personality	Extraversion		.154**
	Agreeableness		.238***
	Conscientiousness		.134*
	Neuroticism		-.105
	Openness to Experience		.156**
	R^2	.038	.193
	F	2.176*	5.729***
	ΔR^2		.164
	F for ΔR^2		11.999***

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Leadership competencies.

7.10.4 Developmental Readiness as Mediator between Personality and Competencies

Hypothesis 7 predicts that DR will mediate the relationship between personality (E, A, C, N, and O) and Competencies (7 a, b, c, d, and e respectively).

According to Baron and Kenny's (1986) recommendations, to test for mediation, (1) a relationship should exist between the IV and DV, (2) between the IV and the mediator, (3) between the mediator and DV when the IV is controlled for, and finally, (4) the IV should add very little influence to the DV beyond that of the mediator. Furthermore, the mediator should not directly affect the IV, nor the DV directly affect the IV or mediator. Personality was shown above to be related to both DR and competencies, the mediator and IV respectively.

DR is not theoretically expected to affect personality, actually the opposite has been shown, nor are competencies expected to affect either personality or DR – quite the opposite actually. Personality has been shown to represent quite stable individual characteristics that are either inherited or learnt slowly through maturation and internalisation, and DR is a more proximal potentiality which has been theoretically discussed above and hypothesised to affect competency acquisition, not the other way around. Agreeableness, Conscientiousness, and Openness to Experience were found to be related to DR in the analyses for hypothesis 4. Thus mediation can be tested for hypotheses 7b, 7c, and 7e. Since there is no relationship between Extraversion or Neuroticism and DR, then mediation cannot be tested for hypotheses 7a and 7d.

Agreeableness, Conscientiousness, and Openness to Experience accounted for 19.3% of the variance in competencies when all the personality variables were entered together in hypothesis 6 above. Alone, they account for 19.9% of the variance in competencies. DR accounts for 37.1% of the variance when controlling for Agreeableness, Conscientiousness, and Openness to Experience. Finally, Agreeableness, Conscientiousness, and Openness to Experience account for only 0.7% of the variance beyond the effect of DR, i.e. only 3.52%, far less than half of their effect alone without the mediator. Thus complete mediation is seemingly supported for Agreeableness, Conscientiousness, and Openness to Experience, supporting hypotheses 7b, 7c, and 7e. Only sex (gender) showed a significant effect of the control variables included. Tables 38 and 39 show the results of the final two steps (steps 3 and 4 explained at the beginning of this section) in the mediation analysis. Table 38 shows that a relationship exists between the DR and competencies when personality is controlled for, and that the effect of personality disappeared when the mediator was introduced, while table 39 shows that the IV, personality, adds very little influence to the DV, competencies, beyond that of the mediator.

It is generally recommended to run a significance test of the indirect effects tested in mediation analyses (Baron & Kenny, 1986; Preacher & Hayes, 2004). Baron and Kenny recommended conducting a Sobel test (Sobel, 1982). Preacher and Hayes (2004) subsequently developed more robust tests of indirect effects that allow for non-linear effects and more developed bootstrapping methods with higher statistical power. Macros provided by Preacher and Hayes for download did not work on SPSS/PASW 18. A Sobel test was conducted online, results were as follows: for Agreeableness, the test statistic was 1.77, p=.08, for Conscientiousness, 1.85, p=.06,

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Table 38- Results of Regression Analysis (Hypothesis 7 - mediation).

		Block 1	Block 2	Block 3
Control	Greece	-.075	-.090	-.088
	UK	-.168*	-.160*	-.109
	STUEX	.102	.113	.062
	LDCtrl	.000	-.048	-.078
	ExecLD	.031	.041	.008
	Previous Training	-.102	-.117	-.106
	Sex	.045	.107	.113*
	Education	.102	.060	.075
	Age	.005	-.001	.034
	Tenure	.081	.056	.042
Personality	Agreeableness		.249***	.060
	Conscientiousness		.135*	-.002
	Openness to Experience		.168**	.062
Mediator	DR			.545***
	R^2	.038	.162	.371
	F	2.176*	5.411***	13.488***
	ΔR^2		.128	.202
	F for ΔR^2		15.121***	95.096***

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Leadership competencies.

Table 39 - Results of Regression Analysis (Hypothesis 7 - mediation). Final Step.

		Block 1	Block 2	Block 3
Control	Greece	-.075	-.084	-.088
	UK	-.168*	-.108	-.109
	STUEX	.102	.048	.062
	LDCtrl	.000	-.074	-.078
	ExecLD	.031	.009	.008
	Previous Training	-.102	-.102	-.106
	Sex	.045	.110*	.113*
	Education	.102	.084	.075
	Age	.005	.037	.034
	Tenure	.081	.046	.042
Mediator	DR		.586***	.545***
Personality	Agreeableness			.060
	Conscientiousness			-.002
	Openness to Experience			.062
	R^2	.038	.371	.371
	F	2.176*	16.852***	13.488***
	ΔR^2		.323	.007
	F for ΔR^2		152.116***	1.093

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Leadership competencies.

and for Openness to Experience, 1.79, p=.07. Thus despite the regression results, the evidence is not strong for the mediating role of developmental readiness.

7.10.5 Students versus Executives

Differences between students and executives were discussed in the previous chapters and hypotheses proposed. Specifically,

Hypothesis 8a: there will be no observed significant associations between values and Developmental Readiness in the case of students.

Hypothesis 8b: there will be observed significant associations between values and Developmental Readiness in the case of executives (same hypotheses as hypothesis 6 will apply).

8b(i): Self-Enhancement will be positively related to Developmental Readiness such that the more the individual values SE, the higher that individual's Developmental Readiness.

8b(ii): Openness to Change will be positively related to Developmental Readiness such that the more the individual values OC, the higher that individual's Developmental Readiness.

8b(iii): Self-Transcendence will be negatively related to Developmental Readiness such that the more the individual values ST, the lower that individual's Developmental Readiness.

8b(iv): Conservation will be negatively related to Developmental Readiness such that the more the individual values CO, the lower that individual's Developmental Readiness.

8b(v): A Closed Orientation will be negatively related to Developmental Readiness such that the more the individual values COST, the lower that individual's Developmental Readiness.

8b(vi): An Open Orientation will be positively related to Developmental Readiness such that the more the individual values OCSE, the higher that individual's Developmental Readiness.

Splitting the sample into student and executive groups, the above hypotheses were tested. None of the values constructs predicted DR significantly in the student sample. Thus hypotheses 8a was supported. As for the executive sample, some values constructs did predict DR. Conservation (β=-.244, p<.01) was negatively and Self-enhancement (β=.261, p<.01) positively related to DR. Self-transcendence and Openness to change were not. As for closed orientation (COST; β=-.282, p<.01) and open orientation (OCSE; β=.287, p<.01), they were negatively and positively related to DR respectively. This provides support for hypotheses 8b(i), 8b(iv), 8b(v), and 8b(vi). Results are displayed in table 40. 8b(ii) and 8b(iii) were not supported.

Post hoc power analyses using G*Power software (Faul et al., 2007, 2009) were again conducted for the different hypotheses (and the different sample sizes in the case of splitting the sample into students and executives). In all cases, for a medium effect size and an α=.05, number of predictors and sample size were entered, yielding power sizes ranging between .93 and .99, which is highly adequate.

Table 40 - Results of regression analyses.

		Block 1	Block 2	Block 2	Block 2	Block 2
Control	Greece	.009	.003	.016	.011	.010
	UK	-.016	-.018	-.023	-.017	-.018
	LDCtrl	.145	.074	.066	.073	.067
	Previous Training	.151	.193	.167	.193	.181
	Sex	-.166	-.190*	-.192*	-.191*	-.193*
	Education	.057	.096	.102	.103	.100
	Age	-.033	.005	.010	.010	.007
	Tenure	-.048	.011	.031	.014	.025
Values 1	Conservation		-.244**			
	Self-Transcendence		-.166			
2	Openness to Change			.138		
	Self-Enhancement			.261**		
3	COST				-.282**	
4	OCSE					.287**
	R^2	.026	.086	.089	.092	.093
	F	1.441	2.221*	2.272*	2.459*	2.485*
	ΔR^2		.070	.073	.068	.070
	F for ΔR^2		4.966**	5.198**	9.770**	9.983**

Standardised Betas are reported. N=131. *p < .05; ** p < .01; *** p < .001.
Dependent variable: DR

7.11 Ad Hoc Analyses - DR Factors

Although this was not hypothesised, ad hoc analyses were conducted on each

DR factor alone (self-awareness, self-regulation, and self-motivation) in the hope of

gaining further insight into the workings of DR. These would be expected to be

directly related to personality and values, since they are what constitute

developmental readiness. Thus some of the main hypotheses were tested again in

relation to each individual factor.

7.11.1 Self-Awareness

Personality versus Self-Awareness: Agreeableness (β=.365, p<.001),

Neuroticism (β=.159, p<.01), and Openness to experience (β=.202, p<.001) were

significantly related to Self-Awareness. Extraversion and Conscientiousness were not. Table 41 depicts the results obtained.

Personality has been linked in the literature to constructs such as self-concept, self-concept clarity, emotional intelligence, etc… These either include or are included in the meta-competency self-awareness. For example, Agreeableness has been linked to self-concept clarity (c.f. Campbell et al., 1996) and emotional intelligence. Neuroticism has been more ambiguous in terms of its relationships, as it contains a certain element of self-consciousness and self-assessment (Renn et al. 2005; Campbell et al., 1996; McCrae & John, 1992), which implies higher self-awareness, but which if excessive, becomes dysfunctional. Extraversion and Conscientiousness have not been typically associated with self-awareness, as well as Openness to experience, although the latter's positive relationship with SA evident in this study could be explained, since openness to experience is a driver for trying new things, learning, curiosity, all of which could influence self-awareness. Of the control variables included, only sex (gender) had a significant effect on self-awareness.

On the other hand, Values are not expected to directly impact SA since they are motivational drivers and may not always be salient to the individual. This was confirmed in that no relationships were found between value orientations and SA in this study.

Table 41 - Results of regression analyses.

		Block 1	Block 2
Control	Greece	-.037	-.040
	UK	-.122	-.075
	STUEX	-.127	-.052
	LDCtrl	.040	-.013
	ExecLD	.235	.201
	Previous Training	.011	-.017
	Sex	-.212***	-.098
	Education	.017	-.024
	Age	-.194**	-.196***
	Tenure	.071	.041
Personality	Extraversion		-.011
	Agreeableness		.405***
	Conscientiousness		.058
	Neuroticism		.139**
	Openness to Experience		.188***
	R^2	.108	.363
	F	4.573***	12.263***
	ΔR^2		.258
	F for ΔR^2		23.973***

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: SA

7.11.2 Self-Regulation

Personality versus SR: Extraversion (β=.153, p<.01), Agreeableness (β=.183, p<.01), and Conscientiousness (β=.305, p<.001) were significantly positively related to self-regulation. As for Neuroticism, it was negatively related to SR (β=-.189, p<.001). None of the included control variables had any significant effects. Table 42 depicts the results.

Personality dispositions have been linked to self-regulation in the literature. Conscientiousness has been tied very clearly to self-regulation and related concepts and behaviours such as procrastination, ability to delay gratification, and self-management (Hoyle, 2006; Renn et al., 2009; Boyatzis et al., 2000). Neuroticism and

impulsivity have been found to be negatively related to self-regulation, ability to delay gratification, monitoring, and positively related to the tendency to procrastinate (Hoyle, 2006; Renn et al., 2005; Renn et al., 2009; Steel, 2007). As for agreeableness, it has been negatively linked to procrastination (Steel, 2007). Furthermore, agreeable people tend to regulate their behaviour more than disagreeable and hostile people even in more hostile or conflicting situations.

Table 42 - Results of regression analyses.

		Block 1	Block 2
Control	Greece	.060	.031
	UK	.021	-.005
	STUEX	.258	.178
	LDCtrl	.116	.062
	ExecLD	-.124	-.057
	Previous Training	.049	.055
	Sex	-.042	.011
	Education	.057	-.003
	Age	-.004	.000
	Tenure	.015	-.011
Personality	Extraversion		.153**
	Agreeableness		.183**
	Conscientiousness		.305***
	Neuroticism		-.189***
	Openness to Experience		.073
	R^2	.009	.212
	F	1.269	6.309***
	ΔR^2		.209
	F for ΔR^2		15.736***

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001. Dependent variable: SR

As for values and self-regulation, only a negative relationship between Closed Orientation (COST) and SR (β=-.131, p<.05) was found. Table 43 depicts the results. A conservative and closed orientation do make the individual more prone to regulation since underlying values such as conformity and tradition are prioritised. One would have also expected to find more significant relationships with all value

orientations since values serve as guides for thoughts, behaviours, and actions. This
would be worth investigating further in future research. As for control variables, only
student or executive status had a significant effect on SR.

Table 43 - Results of regression analyses.

		Block 1	**Block 2**
Control	Greece	.060	.062
	UK	.021	.030
	STUEX	.258	.291*
	LDCtrl	.116	.118
	ExecLD	-.124	-.157
	Previous Training	.049	.062
	Sex	-.042	-.057
	Education	.057	.062
	Age	-.004	.007
	Tenure	.015	.010
Values	COST		-.131*
	R^2	.009	.023
	F	1.269	1.622
	ΔR^2		.016
	F for ΔR^2		4.975*

Standardised Betas are reported. N=297. *$p < .05$; ** $p < .01$; *** $p < .001$.
Dependent variable: SR

7.11.3 Self-Motivation

Significant positive relationships were found between Agreeableness (β=.240,
p<.001), Conscientiousness (β=.198, p<.001), Openness to Experience (β=.187,
p<.001) and self-motivation. Conscientiousness is related to motivation across
different settings (Barrick & Mount, 1991; Judge & Ilies, 2002), to goal orientation
(McCrae & John, 1992). Openness to experience has also been found to drive goal
and action management (Boyatzis et al., 2000). There seem to be no direct links
between agreeableness and SM in the literature. It could be that the drive to be
cooperative and good-natured especially in dealing with people and situations

influences the self-motivation of an individual as opposed to disagreeableness and hostility. Of the control variables, only the UK sample had a significant effect. Table 44 depicts the regression results.

Table 44 - Results of regression analyses.

		Block 1	Block 2
Control	Greece	.001	-.025
	UK	-.148*	-.156*
	STUEX	.047	.024
	LDCtrl	.129	.074
	ExecLD	.013	.048
	Previous Training	-.056	-.065
	Sex	-.028	.023
	Education	-.002	-.057
	Age	.040	.036
	Tenure	.058	.028
Personality	Extraversion		.049
	Agreeableness		.240***
	Conscientiousness		.198***
	Neuroticism		-.089
	Openness to Experience		.187***
	R^2	.020	.177
	F	1.599	5.234***
	ΔR^2		.165
	F for ΔR^2		11.895***

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.
Dependent variable: SM

Value orientations are directly linked to self-motivation since they are by definition motivational drivers of attitudes and behaviour. Conservation (β=-.194, p<.001) and COST (closed orientation – β=-.153, p<.01) were negatively related to SM, and OCSE (open orientation – β=.138, p<.05) was positively related to SM. This is consistent with the literature on values and value orientations. Conservation and a general closed orientation reflects a tendency to be resistant to change and thus less motivated to seek it, while an open orientation reflects the opposite tendency, an

openness to learning, change, and development. None of the included control variables had any significant effects. Results are displayed in table 45.

Table 45 - Results of regression analyses.

			Block 1	Block 2	Block 2	Block 2	Block 2
Control		Greece	.001	-.020	-.001	.003	.001
		UK	-.148*	-.135	-.138	-.138	-.143
		STUEX	.047	.098	.087	.084	.085
		LDCtrl	.129	.133	.131	.131	.132
		ExecLD	.013	-.031	-.024	-.025	-.025
		Previous Training	-.056	-.033	-.038	-.040	-.043
		Sex	-.028	-.041	-.043	-.046	-.045
		Education	-.002	-.007	.004	.005	.005
		Age	.040	.044	.050	.052	.052
		Tenure	.058	.054	.054	.052	.054
Values	1	Conservation		-.194***			
		Self-Transcendence		-.027			
	2	Openness to Change			.108		
		Self-Enhancement			.091		
	3	COST				-.153**	
	4	OCSE					.138*
		R^2	.020	.050	.033	.039	.035
		F	1.599	2.292**	1.832*	2.103*	1.984*
		ΔR^2		.035	.019	.022	.018
		F for ΔR^2		5.508**	2.894	6.824**	5.586*

Standardised Betas are reported. N=297. *$p < .05$; ** $p < .01$; *** $p < .001$.
Dependent variable: SM

Finally, table 58 in Appendix 10 displays results concerning all dependent variables for comparison purposes. The table shows how each individual DR factor is influenced by personality and values. The pattern of results obtained may help clarify why DR is or is not influenced by a particular personality disposition or value orientation.

CHAPTER 8: DATA ANALYSIS, RESULTS, AND FINDINGS – TIME 2

8.1 Chapter Overview

This chapter presents findings from the pre-test post-test longitudinal data. The main aim of this chapter is to test the hypothesis that developmental readiness moderates the developmental process. The analyses show that moderation is supported. Additionally, some ad hoc relationships are also tested, confirming some of the study's cross-sectional hypotheses, and exploring individual DR factors. Self-motivation is also found to moderate development.

8.2 Participants

At time 2, i.e. after the course or programme, only those who had completed the first questionnaire were contacted. Access to the Notre Dame University student sample was not possible. The final sample consisted of 44 executives and 63 students. Thus total sample size for time 2 was 107, excluding the first executive cohort. 3 of the response sets had to be discarded because of significantly missing data (over 50% of the questionnaire). Therefore the final time 2 sample size was 104. Response rate was 39.2% including the first cohort, and 36% excluding the first cohort. Table 46 shows the composition of the final sample.

Table 46 - Sample distribution for Time 1 and Time 2.

	Source	Group	Experimental	Control	Percentages
Time 1					**Sample: 297**
Executive	ABS	Group 1	29	19	16.16%
Education		Group 2	19	0	6.40%
Undergraduates	NDU	Group 1	19	21	13.47%
	ABS	Group 2	23	20	14.48%
Graduate	NDU	Group 1	22	0	7.41%
	ABS	Group 2	17	17	11.45%
	ABS	Group 3	47	0	15.82%

	Source	Group	Experimental	Control	Percentages
	ALBA	Group 4	44	0	14.81%
Time 2					**Sample: 104**
Executive	ABS	Group 1	9	19	26.92%
Education		Group 2	16	0	15.38%
Undergraduates	NDU	Group 1	0	0	
					0.00%
	ABS	Group 2	16	6	21.15%
Graduate	NDU	Group 1	0	0	0.00%
	ABS	Group 2	12	11	22.12%
	ABS	Group 1	7	0	9.62%
	ALBA	Group 2	8	0	7.69%

*ABS= Aston Business School; NDU= Notre Dame University;
ALBA= ALBA Graduate Business School

8.3 Descriptive Statistics

Participant distribution was the following: 8 (7.69%) from Greece, and 96 (92.31%) from the UK. There were 47 (45.19%) students and 57 (54.81%) executives, 69 (66.35%) LD (experimental condition) and 35 (33.65%) control. 53 (50.96%) were female, 51 (49.04%) male. 23 (22.12%) had a BA, BS, or equivalent, and 81 (77.88%) were at the graduate level or beyond. 73 (70.19%) were below 35 years of age, and 31 (29.81%) were above 35. 32 (30.77%) had up to 4 years work experience, and 72 (69.23%) had more than 4 years experience. Sample composition across time 1 and time 2 was close, with some differences as displayed in table 47.

Table 47 - A comparison of sample composition across time 1 and 2.

		Time 1	Time 2
Gender	Male	54.88%	49.04%
	Female	44.78%	50.96%
Education	Up to Bachelor's	31.31%	22.12%
	Master's and more	68.69%	77.88%
Age	Below 35	81.82%	70.19%
	Above 35	18.18%	29.81%
Work Experience	Up to 4 years	70.03%	30.77%
	4 + years	19.97%	69.23%

8.4 Variables

Variables measured at time 2 were the following:

- o Developmental Readiness (DRT2) – standardised scores (means) of Self-Awareness (T2SA), Self-Regulation (T2SR), and Self-Motivation (T2SM).

- o Leadership/Managerial Competencies Time 2 (LCT2).

- o Leadership Development (LD) – LCT1/LCT2 absolute difference.

The means and standard deviations for variables are summarised in Table 48.

Table 48 - Means, Medians, SDs, SEs, and Variances for Time 2 variables.

	Mean	SE	Median	SD	Variance
T2SA	-0.02*	0.08	-0.07	0.78	0.61
T2SR	3.82	0.05	3.94	0.51	0.26
T2SM	4.63	0.05	4.57	0.53	0.28
DRT2	-0.04*	0.07	-0.05	0.66	0.44
LCT2	4.05	0.04	4.00	0.39	0.15
LD	0.28	0.03	0.19	0.31	0.09

*standardised variables

8.5 Correlational Analyses

Correlations between all time 1 and time 2 variables are presented in table 49 below.

Table 49 - Correlations between variables.

Scale	Variable	1	2	3	4	5	6	7	8	9	10	11	12
Personality	1.Extraversion	1.00											
	2.Agreeableness	.204*	1.00										
	3.Conscientiousness	-.057	-.041	1.00									
	4.Neuroticism	-.136	.132	-.070	1.00								
	5.Openness to Experience	.214*	.216*	-.206*	.042	1.00							
Values	6. Conservation	-.407**	-.133	.205*	.089	-.383**	1.00						
	7.Self-Transcendence	-.007	.309**	-.022	-.192	.137	-.074	1.00					
	8.Openness To Change	.312**	-.107	-.330**	-.087	.250*	-.695**	-.255	1.00				
	9.Self-Enhancement	.173	.018	.115	.159	.072	-.370**	-.493	-.058	1.00			
	10.COST	-.327**	.102	.148	-.058	-.211*	.743**	.612*	-.722**	-.624*	1.00		
	11.OCSE	.343**	-.057	-.128	.068	.222*	-.752**	-.558	.616**	.751**	-.970**	1.00	
Developmental	12.Dev. Readiness T1	.228*	.474**	.317**	-.091	.293**	-.246*	.042	.057	.149	-.167	.155	1.00
Readiness	13.Self-Awareness	.127	.552**	.048	.235*	.353**	-.171	.065	.006	.130	-.091	.107	.658**
	14.Self-Regulation	.242*	.236*	.474**	-.296**	.053	-.138	.020	-.016	.111	-.097	.077	.784**
	15.Self-Motivation	.161	.364**	.193*	-.099	.305**	-.266**	.019	.134	.114	-.198*	.178	.894**
Competencies	16.Competencies T1	.226*	.323**	.143	-.160	.341**	-.234*	.047	.081	.104	-.154	.136	.588**
BIDR	17.BIDR	.153	-.028	.342**	-.406**	.075	-.113	.104	-.016	.041	-.020	.022	.239*
Developmental	18. Dev. Readiness T2	.251*	.374**	.214*	-.323**	.242*	-.309**	.210*	.031	.124	-.104	.119	.676**
Readiness	19.Self-Awareness T2	.140	.484**	.001	.110	.317**	-.257**	.124	.115	.088	-.120	.145	.475**
	20.Self-Regulation T2	.229*	.117	.316**	-.440**	.029	-.119	.164	-.080	.070	.016	.003	.421**
	21.Self-Motivation T2	.167	.255**	.114	-.298**	.209*	-.302**	.161	.052	.111	-.131	.122	.568**
Competencies	22.Competencies T2	.098	.013	.127	-.226*	.061	-.047	.034	-.061	.138	-.015	.069	.095
Development	23.LD	-.036	.073	.035	-.186	.048	-.002	-.159	.063	.080	-.108	.105	.116

*. Correlation is significant at the 0.05 level (2-tailed).   **. Correlation is significant at the 0.01 level (2-tailed).

Table 49 - Correlations between variables (continued).

Scale	Variable	13	14	15	16	17	18	19	20	21	22	23
Developmental	13.Self-Awareness	1.00										
Readiness	14.Self-Regulation	.177	1.00									
	15.Self-Motivation	.463**	.597**	1.00								
Competencies	16.Competencies T1	.316**	.509**	.536**	1.00							
BIDR	17.BIDR	-.092	.478**	.131	.261**	1.00						
Developmental	18. Dev. Readiness T2	.361**	.576**	.627**	.539**	.313**	1.00					
Readiness	19.Self-Awareness T2	.712**	.127	.343**	.273**	-.123	.531**	1.00				
	20.Self-Regulation T2	-.019	.601**	.351**	.410**	.482**	.752**	.017	1.00			
	21.Self-Motivation T2	.187	.459**	.643**	.462**	.246*	.847**	.266**	.502**	1.00		
Competencies	22.Competencies T2	-.080	.196*	.082	.453**	.230*	.370**	.063	.396**	.300**	1.00	
Development	23.LD	.190	-.013	.112	-.109	-.097	-.036	.338**	-.173	-.021	-.171	1.00

*. Correlation is significant at the 0.05 level (2-tailed).   **. Correlation is significant at the 0.01 level (2-tailed).

8.6 Scale Reliabilities

Scale reliabilities for time 2 are reported in table 50. They all fall above the
recommended .70 or .80 levels (Nunnally, 1978).

Table 50 - Scale properties.

Scale	Number of Items	Cronbach's Alpha
SSRQ	9	.768
MTQ	7	.703
RSMS-PSC	17	.862
DR	33	.855
LC	28	.885

8.7 Inferential Statistics

Paired samples t-tests showed no significant differences between DR time 1
and 2 either for the whole sample or within the student and executive or experimental
and control samples alone; as for competencies, Competencies Time 1 (M=3.96,
SE=.04) differed significantly from Competencies Time 2 (M=4.05, SE=.04),
t(103)=-2.33, p=.022, r=.22. No significant differences existed within the student and
executive or experimental and control groups. Thus there was a general increase in
competency levels across groups between time 1 and time 2. Although DR is dynamic
and is developable as individuals progress through their lives and careers, it was not
expected to change much between time 1 and time 2 since it consists of meta-
competencies that take more time and different sorts of initiatives and experiences to
develop and change than more practically oriented ones targeted in the kind of

developmental programmes that were used in this study. This was confirmed by the paired-samples t-test results above. On the other hand, competencies targeted were expected to change between time 1 and time 2, as this is the whole point of the developmental initiatives. This was confirmed by the paired-samples t-test results. The unexpected finding, though, was that there were no significant differences in terms of competencies between time 1 and time 2 between the experimental and control groups.

Independent samples t-tests comparing the **student and executive** groups, the **intervention and control** groups, and the **student and executive intervention** groups revealed no significant differences between groups regarding development. Hypothesis 2b suggested that students will develop competencies at a lesser rate than executives. Since there were no significant differences between the two groups, hypothesis 2b was not supported. Additionally, one way ANOVAs comparing the four sample groups (student control and intervention, executive control and intervention) and the different development groups showed no significant effects on development.

Post hoc power analyses using G*Power software (Faul et al., 2007, 2009) for the above t-tests and ANOVAs for the different groups did not reveal adequate power in all cases. For paired sample t-tests, power was .99. For independent samples t-tests, power was .81 for the student and executive groups, .77 for the experimental and control groups, and .65 for the student and executive experimental groups. As for the ANOVAs, power was only .54 for the sample groups and .44 for the different

development groups, thus indicating possible higher sampling error and lower possibility of detecting a reasonable departure from the null hypothesis for the given effect size and probability levels. This is because of small sample size for these groups. Power was calculated on the basis of a medium effect size and .05 error probability level.

8.8 Hypothesis testing

8.8.1 Developmental initiatives and Development

Hypothesis 1 predicted that developmental initiatives will lead to leadership development, i.e. change in competencies.

Analyses were conducted in two ways: using regression analyses and ANOVAs. First, hierarchical multiple regressions were used. Tenure, sex, education, age, previous training, and student or executive were controlled for in a first block. Time 1 leadership competencies was also controlled for in a second block since the absolute difference score was used, to partial out its effects (Cohen et al., 2003). In the final step the IV (intervention or control) was entered in a last block. Results are displayed in table 51. No significant effect was found on development, and thus hypothesis 1 was not supported. Additionally, none of the control variables included had any significant effect on development.

Some researchers advocate the use of the time 2 variable as the DV while controlling for time 1 as a superior method to using difference scores. The argument here is that change in any direction signifies development, thus using the absolute value is appropriate in this case. In any case, regressions were also conducted in that

manner, as well as using the arithmetic difference score as the dependent variable,

both yielding no significant results.

Table 51 - Results of Regression Analysis (Hypothesis 1).

		Block 1	**Block 2**	**Block 3**
Control	StuExec	.270	.264	.270
	Previous Training	.130	.122	.111
	Sex	-.058	-.025	-.024
	Education	-.006	.022	.024
	Age	-.190	-.185	-.197
	Tenure	-.127	-.150	-.143
Time1(Comp)	LCT1		-.148	-.148
IV	LDCtrl			-.041
	R^2	.011	.021	.012
	F	1.186	1.311	1.156
	ΔR^2		.019	.002
	F for ΔR^2		1.986	.158

Standardised Betas are reported. N=104. $*p < .05$; $** p < .01$; $*** p < .001$.
Dependent variable: Development

Experimental studies generally seem to favour using ANOVAs for hypothesis

testing. Thus ANOVAs were conducted as well. Repeated Measures ANOVAs

revealed no significant effects of the intervention on competency development.

Similarly, ANCOVAs with competencies time 2 as DV, LD or Control as IV, and

competencies time 1 as covariate and ANCOVAs with Development (both arithmetic

and absolute difference) as DV also revealed no significant effects.

In summary, then, it seems that taking part in this study's developmental

initiatives did not result in development or change in competencies. It is surprising

that taking part in this kind of developmental intervention does not seem to have

much effect on the learning or development incurred in individuals, adding seemingly

very little value to the learning that naturally occurs in action, on the job, when faced

with challenging assignments, and due to both positive and negative daily interactions. It may be that more time is needed for the change in competency levels to actually be practically manifested, transferred to the job or situation, and more accurately assessed. This is further discussed in chapter 9.

8.8.2 The Moderating Role of Developmental Readiness

Hypothesis 3 predicted a moderating role for DR in the developmental process. It stated that Developmental Readiness will moderate the relationship between developmental interventions and leadership development outcomes (change in competencies) such that the higher the level of DR, the greater the change incurred.

When a weak or inconsistent relationship exists between a predictor and criterion variable, moderators would be introduced to explore/explain individual or situational factors that affect the strength of the relationship (Baron and Kenny, 1986; Edwards & Lambert, 2007). Anyhow, the moderation was proposed a priori.

In line with recommendations from Baron and Kenny (1986), to test for moderation, Development (absolute difference) was regressed on the interaction term (DRxLDCtrl) while controlling for both DR (moderator) and LDCtrl (IV). DR time 1 was used as intended since there was no significant change between time 1 and time 2. The IV, the moderator, and control variables are supposed to be standardised. Since all the control variables and the IV were binary, they were not standardised. Controlling for tenure, sex, education, age, previous training, and student or executive in a first block, time 1 competencies in a second block, the IV and the moderator in a third and fourth block, and the interaction term in a fifth block yielded the results

displayed in table 52. Moderation was supported; DR (β=.706, p<.05) did moderate the developmental process. Thus hypothesis 3 was supported. Figure 9 shows the interaction plots.

Judging from the interactions and results, it seems that people with higher DR do tend to develop more than their (control) counterparts when they are offered a formal developmental opportunity. On the other hand, the patterns shown by those low on DR are surprising. Control group members with low developmental readiness showed more development than their counterparts (those in the intervention group). It may be that those with low DR tend not to attach any importance to developmental programme potential benefits, and may only be browsing through to get a diploma or degree (or even just pass a course in the case of students), whereas when not offered (or seeking) any developmental opportunity, the natural process of learning by doing, learning on-the-job, and "osmosis" from life challenges and activities results in development anyway, regardless of low developmental readiness. It may also be the result of particularities of this particular control group.

Additionally, in line with typical experimental studies, a series of ANCOVAs were conducted to test for moderation. The interaction of DR with experimental condition was significant for development (F(1,99)=6.578, p<.05), thus supporting moderation. A three-way interaction ANCOVA was also conducted to check for effects of developmental readiness, experimental condition, and student or executive status, revealing no significant results.

Table 52 - Results of Moderated Regression Analysis (Hypothesis 3).

		Block 1	Block 2	Block 3	Block 4	Block 5
Control	STUEX	.270	.258	.264	.249	.266
	Previous Training	.130	.124	.113	.080	.065
	Sex	-.058	-.032	-.031	-.011	-.015
	Education	-.006	.021	.024	.017	.004
	Age	-.190	-.186	-.198	-.181	-.198
	Tenure	-.127	-.134	-.127	-.146	-.117
Time1 (Comp)	LCT1		-.119	-.120	-.304*	-.300*
IV	LD or Ctrl			-.044	-.115	-.101
Moderator	DR				.302*	-.390
Interaction	Interaction					.720*
	R^2	.068	.081	.083	.136	.184
	F	1.186	1.210	1.072	1.640	2.092*
	ΔR^2		.013	.002	.053	.048
	F for ΔR^2		1.331	.175	5.754*	5.463*

Standardised Betas are reported. N=104. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Development

Figure 9 - Interaction plot between experimental condition, DR, and leadership development.
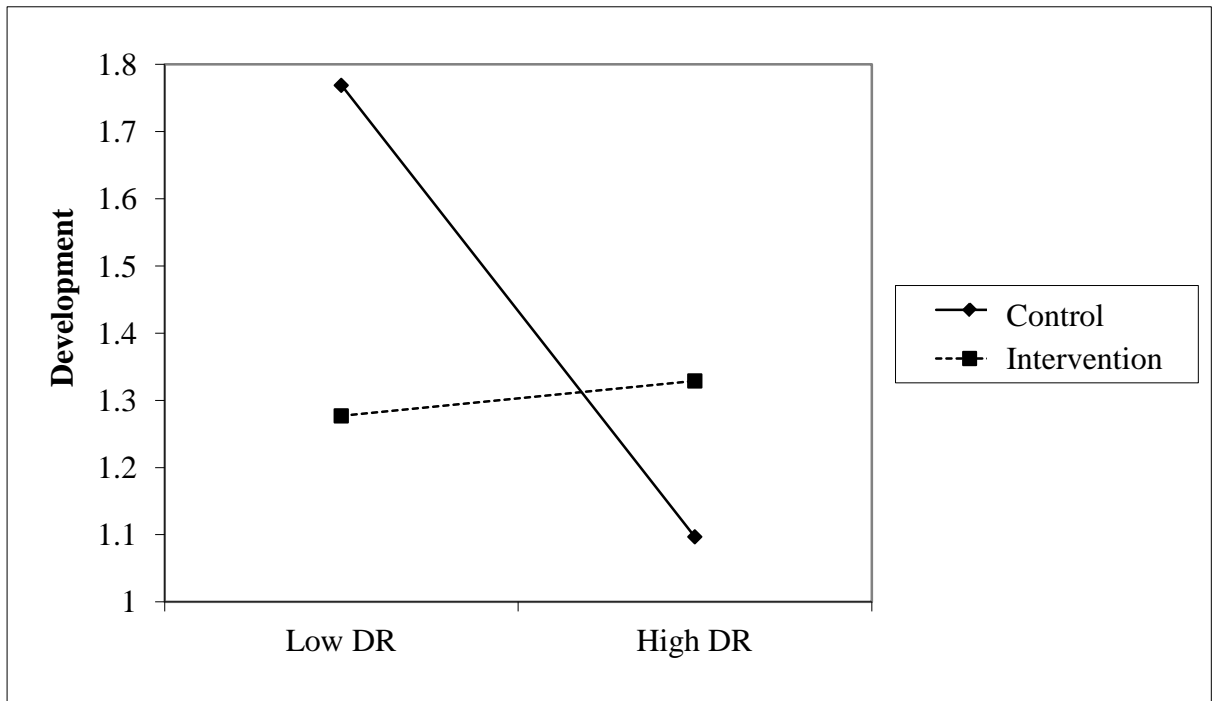
Table 53 - Moderated Regression Analysis using arithmetic difference (H3).

		Block 1	Block 2	Block 3	Block 4	Block 5
Control	STUEX	.096	.041	.045	.058	.056
	Previous Training	-.073	-.100	-.107	-.077	-.076
	Sex	-.116	-.007	-.006	-.024	-.023
	Education	-.195	-.077	-.075	-.068	-.067
	Age	.036	.057	.049	.034	.036
	Tenure	-.032	-.063	-.059	-.042	-.044
Time1 (Comp)	LCT1		-.508***	-.508***	-.344**	-.345**
IV	LD or Ctrl			-.026	.037	.036
Moderator	DR				-.269*	-.210
Interaction	Interaction					-.062
	R^2	-.019	.218	.211	.248	.241
	F	.684	5.110***	4.438***	4.783***	4.266***
	ΔR^2		.231	.001	.042	.000
	F for ΔR^2		30.417***	.076	5.766*	.048

Standardised Betas are reported. N=104. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Development (arithmetic difference)

Figure 10 - Interaction plot (experimental condition, DR, and development).
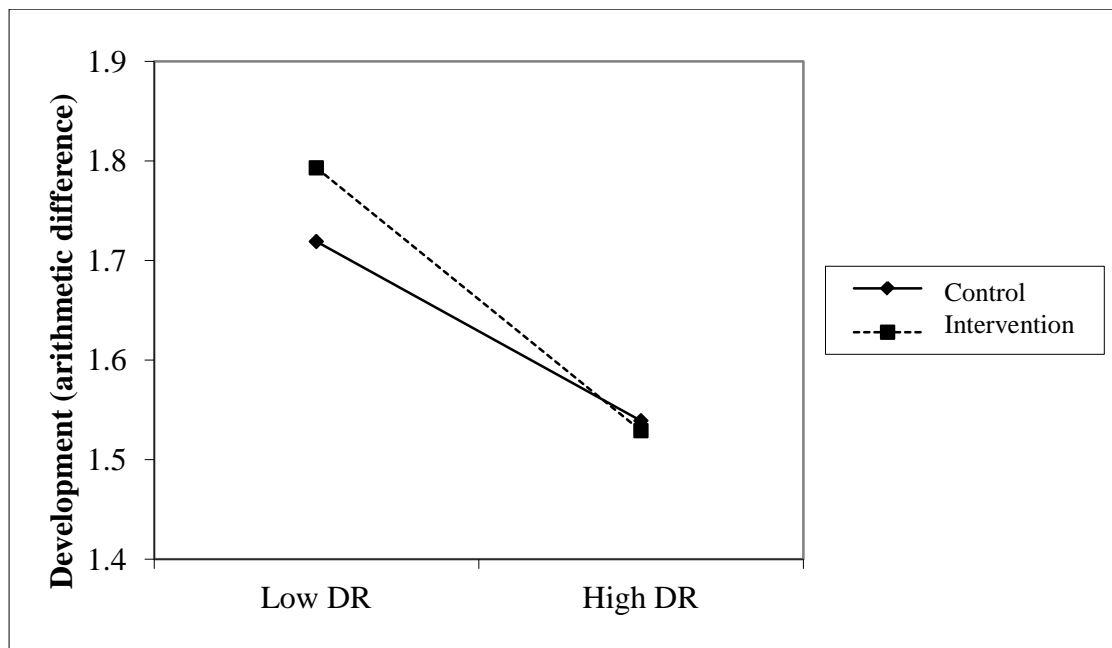
Finally, and for the sake of transparency, the same analyses were repeated using the arithmetic difference score as the DV. Results are reported in table 53 and figure 10.

Post hoc power analyses using G*Power software (Faul et al., 2007, 2009) were again conducted for the different tests and hypotheses. For a medium effect size and α=.05, power sizes ranged between .88-.95 for regression analyses, and between .71-.85 for the different ANOVAs.

8.9 Ad Hoc Analyses

8.9.1 Personality, Values, and Developmental Readiness

Relationships between personality dispositions, value orientations, and developmental readiness are expected to hold over time. Since developmental readiness was also measured at time 2, hypotheses 4 and 5 were tested again as an additional/clearer test of causality. The same pattern of relationships emerged for personality dispositions, with an added negative association between Neuroticism and DR.

As for values, only conservation (β=-.310, p<.01) and self-transcendence (β=.204, p<.05) were related to DR, but the relationship in the case of self-transcendence was positive, contrary to expectations. Again, no significant effects of any of the control variables were found. Results are displayed in tables 54 and 55. However, no significant associations of personality or values with time 2 competencies were found.

Table 54 - Results of Regression Analysis.

		Block 1	Block 2
Control	UK	.068	-.019
	STUEX	-.018	-.171
	LDCtrl	.288	.071
	ExecLD	-.075	.129
	Previous Training	.038	.032
	Sex	.111	.026
	Education	.121	.056
	Age	.066	.166
	Tenure	.035	.049
Personality	Extraversion		.125
	Agreeableness		.356***
	Conscientiousness		.233**
	Neuroticism		-.343***
	Openness to Experience		.202*
	R^2	.000	.323
	F	.998	4.506***
	ΔR^2		.328
	F for ΔR^2		9.966***

Standardised Betas are reported. N=104. *p < .05; ** p < .01; *** p < .001.
Dependent variable: DR Time 2

Table 55 - Results of Regression Analysis.

		Block 1	Block 2
Control	UK	.068	.024
	STUEX	-.018	.151
	LDCtrl	.288	.284
	ExecLD	-.075	-.078
	Previous Training	.038	.110
	Sex	.111	.088
	Education	.121	.066
	Age	.066	-.007
	Tenure	.035	.022
Values	Conservation		-.310**
	Self-Transcendence		.204*
	R^2	.000	.127
	F	.998	2.360*
	ΔR^2		.133
	F for ΔR^2		7.836***

Standardised Betas are reported. N=104. *p < .05; ** p < .01; *** p < .001.
Dependent variable: DR Time 2

8.9.2 DR Factors

Moderation analyses were also conducted on each DR factor alone. No significant results emerged for self-awareness and self-regulation. As for self-motivation, moderation was supported (β=1.702, p<.05), with the same interaction pattern as developmental readiness. Of the control variables included, student or executive status as well as time 1 competencies had a significant effect on development. Results are displayed in table 56 and plotted in figure 11 below.

Table 56 - Results of Moderated Regression Analysis for Self-Motivation.

		Block 1	Block 2	Block 3	Block 4	Block 5
Control	STUEX	.270	.264	.270	.286	.304*
	Previous Training	.130	.122	.111	.085	.082
	Sex	-.058	-.025	-.024	-.002	-.003
	Education	-.006	.022	.024	.017	.018
	Age	-.190	-.185	-.197	-.235	-.253*
	Tenure	-.127	-.150	-.143	-.172	-.151
Time1 (Comp)	LCT1		-.148	-.148	-.328**	-.303*
IV	LD or Ctrl			-.041	-.113	-1.517*
Moderator	SM				.315**	-.379
Interaction	Interaction					1.702*
	R^2	.011	.021	.012	.071	.110
	F	1.186	1.311	1.156	1.880	2.276*
	ΔR^2		.019	.002	.064	.044
	F for ΔR^2		1.986	.158	7.081**	5.099*

Standardised Betas are reported. N=104. *p < .05; ** p < .01; *** p < .001.
Dependent variable: Development

Figure 11 - Plot of moderating role of SM.
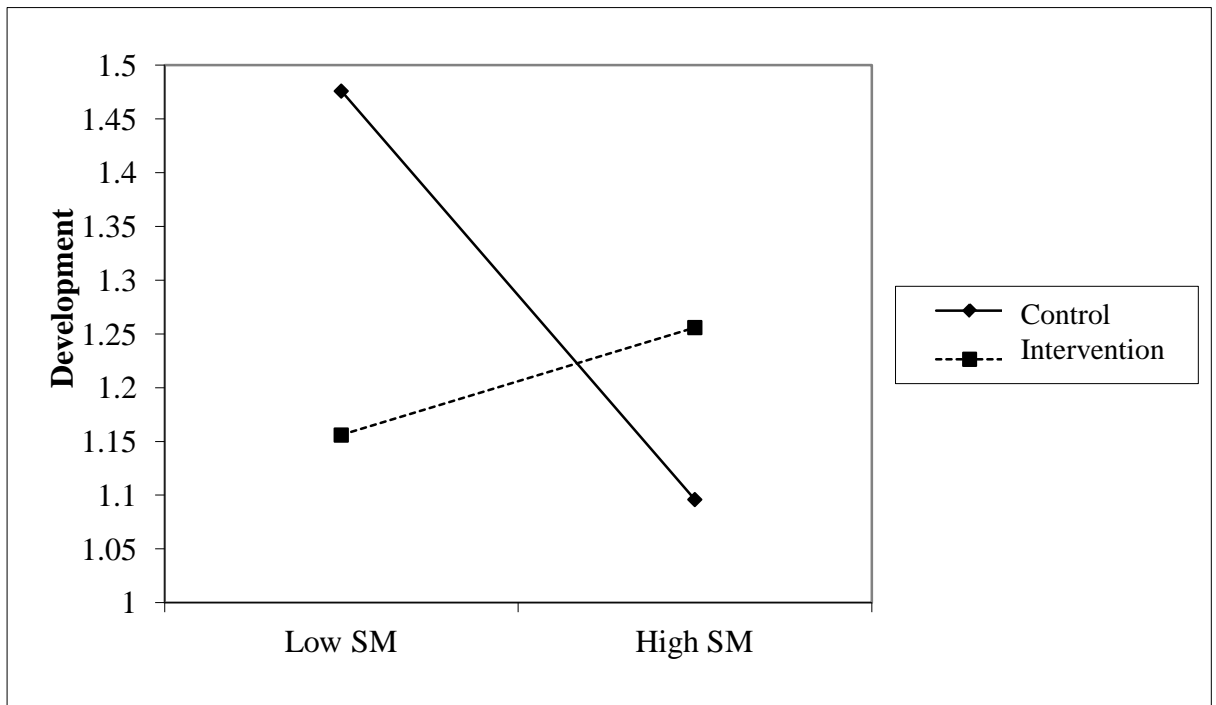
CHAPTER 9: DISCUSSION AND INTEGRATION OF FINDINGS

9.1 Chapter Overview

This chapter summarises, discusses, and integrates the main findings and implications of this research. First, a summary of the research objectives and study design is presented. Next, study findings are highlighted and discussed. Then implications for both theory and practice are highlighted, followed by a discussion of study limitations, both methodological and theoretical. Finally, directions and avenues for future research conclude the chapter.

9.2 Research Objectives

This thesis set out with the aim to add one new informative and practically relevant piece to the leadership development puzzle. Specifically, the aim was to understand what aids the development process, what individual characteristics lead to a readiness and propensity to learn, internalise, and apply newly learnt skills, abilities, and attitudes, and what precursors exist that may lead to this readiness to develop. Not an easy task when one examines the huge variety of different approaches and theories in both the academic and practitioner literature. Additionally, secondary objectives included the confirmation or disconfirmation of claims regarding developmental program effectiveness, exploring differences between novices (students) and experts (executives), and finally exploring the connections between personality, developmental readiness, and competencies.

The notion of Developmental Readiness was introduced and discussed. That is the key contribution of this thesis: the moderating role of Developmental Readiness in leadership development, and the role of personality dispositions and individual values as antecedents of DR.

The key hypotheses proposed in this thesis are summarised in the following: **personality dispositions and individual values predict Developmental Readiness; this in turn moderates the relationship between developmental interventions and leadership development outcomes.** This was naturally split into several hypotheses, summarised in chapter 5 above (tables 4 & 5 page 179).

A quasi-experimental pre-test post-test design with control group was conducted, with both a cross-sectional and longitudinal part. 297 people took part in the first wave, right before the intervention, and 104 in the second wave of the study, one to three months after the intervention. The developmental interventions chosen were formal and executive education leadership and management courses all consisting of a taught and experiential part. The next section will present and discuss research findings.

9.3 Summary and Integration of findings

Table 57 presents a brief summary of the main objectives, hypotheses, and findings of the study.

Table 57 - Summary of Study Objectives, Hypotheses, and Findings

Research Objectives*	Hypotheses	Findings	Comments
Confirming or disconfirming claims that developmental programs are effective	H1: Management and Leadership Development programmes will be positively associated with leadership development.	No significant development occurred between control and experimental groups	Adds to the confusion regarding developmental program effectiveness; time may have been an important factor
Understanding what aids (the mechanisms underlying) the developmental process	H3: Developmental Readiness will moderate the relationship between developmental interventions and leadership development outcomes (change in competencies) such that the higher the level of DR, the greater the change incurred.	DR did moderate the developmental process; control group results confusing	Several factors may have affected these results; see section 9.3.2 for an in-depth discussion
Exploring differences between novices and experts regarding DR and development	H2a: Students will have lower competency levels than executives.	Confirmed	People with more experience will have acquired higher competency levels
	H2b: Students will develop competencies at a lesser rate than executives.	Disconfirmed	No differences in terms of rate of development

	H8a: There will be no observed significant associations between values and DR in the case of students.	Confirmed	Values play a more significant role as people mature
	H8b: There will be observed significant associations between values and DR in the case of executives	Confirmed	
Studying precursors to Developmental Readiness – Personality Dispositions	H4: Personality dispositions will predict Developmental Readiness.	Extraversion and Neuroticism did not predict DR; Agreeableness, Conscientiousness, and Openness to Experience did predict DR	Results as expected except for Neuroticism; personality does play a significant role in predicting DR
Studying precursors to Developmental Readiness – Individual Values	H5: Individual value priorities will predict DR.	Conservation, Open, and Closed Orientation predicted DR; Self-Transcendence, Self-Enhancement, and Openness to Change did not	Results in line with expectations although weaker than expected; Values may play a less prominent role in predicting DR

Exploring the connections between Personality, DR, and Competencies	H6: Personality dispositions will predict the competency level of individuals.	All except Neuroticism predicted Competency levels	Personality seems to be linked to competencies; in fact personality profiling is often used in selection processes
	H7: DR will mediate the relationship between personality and Competencies.	Mediation results significant for A, C, & O but Sobel tests not significant	Support is not strong for a mediating role of DR between personality and competencies

*Objectives in Bold typeface represent main thesis objectives; Objectives in normal typeface represent secondary objectives that serve the main objectives.

9.3.1 Developmental Interventions and Development

Hypothesis 1 was necessary both as a precursor to hypothesis 3 and as further confirmation or disconfirmation of claims that developmental programmes lead to actual change and development. Hypothesis 1 stated that developmental initiatives will lead to leadership development, i.e. change in competencies. Despite assumptions in most leadership development studies that this would be the case, previous findings that have found positive effects of development (c.f. Avolio et al., 2009, 2005), and all claims made to that effect by training and development providers, this hypothesis was not supported. There was no significant difference in learning and competency acquisition between the experimental and control groups. These findings are not entirely surprising. In fact, Gray and Mabey (2005) pointed out that training and development activities do not necessarily always result in productive learning and that there is little empirical evidence supporting the premise that management development leads to improvement in capabilities. Boyatzis and Saatcioglu (2008) also complained that overall results from evaluations are less than satisfactory. One cannot then conclude on the basis of these findings, though, that all development programmes do not lead to learning, change, and development.

Several reasons may have caused this lack of support for the hypothesis. Although development did occur overall between time 1 and time 2, there was no difference between groups. And although there was some difference between the experimental (M=-.0400, SE=.07) and control groups (M=-.2653, SE=.12) in terms of Developmental Readiness (t(102)=-2.359, p=.02), that did not seem to significantly

impact differences in development between the two groups. It could be that these control groups in particular had opportunities to learn informally on-the-job or within their day to day activities (student groups or extracurricular activities that involved leadership and/or management in the case of students), which offset the difference expected between not having any opportunity for development and attending a formal developmental initiative.

Another reason may be related to the nature of the interventions offered to this sample. It could be that these developmental initiatives in particular (all comprised of a formal lecture/discussion part and an experiential and project part) do not really add value in terms of these particular leadership and managerial competencies studied (and required for the corporate world) and the outcomes required. It may be that the wrong tools are being promoted and used in leadership development. Armstrong and Sadler-Smith (2008) pointed out that both in the U.K. and the U.S., the majority of training and developmental interventions were still primarily using the traditional face-to-face, classroom setting, instructor-led approach despite surveys concluding that employee preferences were for accessible, bite-sized, own-pace, flexible methods. It might be that these results are an indication that new, non-traditional, and higher-impact methods must be designed and delivered for these purposes.

Time may also have been an important factor. Typically, response and reactions to training are the most positive right after an initiative, when learning is still fresh in their minds and people are excited and motivated to apply that learning (Boyatzis, 2008). The problem most commonly faced is that of unsustainability of that

learning and lack of transfer to the job (Boyatzis, 2008) due to various individual and organisational factors. In this study, respondents filled out the time 2 surveys in a timeframe ranging from 0 to 3 months after going through the training – the typical most positive timeframe in terms of reactions, but maybe not in terms of behavioural improvement. It may be that they had not yet had the time to assimilate and reflect on the learning they acquired, it may be that they did not yet perceive its practical relevance to their own situations, or that they simply really did not learn much. Needless to say, if a time 3 were administered as had been the intention at the outset of the study, results may have been easier to interpret and more meaningful. But that was rendered impossible due to practical and bureaucratic constraints. It has been argued that for development to be manifested, a more significant amount of time should pass – enough time for a true transformation in behaviours, attitudes, mindsets, and expertise (c.f. Day et al., 2009; Halpern, 2004). But then again, the focus of this study was more on the developmental process, individual characteristics and other factors that influence and make this process more effective. So the question of whether learning actually does occur was secondary in importance.

On the other hand, this lack of support for hypothesis 1 may be due to problems in response patterns. The scale used to assess competencies, as already discussed in chapters 5 and 6, was originally designed for both self-reports and 360-degree feedback. The fact that the 360-degree feedback fell through compromised some objectivity in assessment of competencies and thus development. Not all individuals possess the clarity of vision required for truly objective assessment. In this sample, a noticeable pattern was that many respondents unabashedly gave themselves

the highest rating in all competencies (*don't we have it all?*) at time 1 already, which left them with no room for change and development (since they were already perfect!). But then again, though, any change – whether positive or negative – is still change. Positive change reflects a perceived acquisition or improvement in competencies. On the other hand, change in the opposite direction means the person has come to a more objective assessment of him/herself, which is a change in itself – not necessarily in all competencies per se, but still a change in mindset, ability to judge more objectively (a managerial competency), as well as a better understanding of what a particular competency entails. This is why the absolute value of development was used as the final score for development. Still, no difference between the intervention and control groups emerged, where both groups were assessed identically. Response patterns may have obscured differences to some extent, and that in conjunction with the other reasons discussed may have led to the results obtained.

Some may argue that this sample is not representative, especially since part of it was a student sample and some of the courses were typical MBA courses, even if they did comprise a practical/experiential part. It may be that student mindsets and motivations lie elsewhere than executives and people in the corporate world. Yet student demographics were such that they all had at least one to three years' work experience (in fact, entry requirements for MBA programmes are three years' experience), which puts them on a par with typical employees sent to development programmes. Moreover, a look at both formal and informal leadership and management development programmes was intended since they are both targeted as developmental initiatives. Furthermore, it seems to the author from observations

arising from conversations with managers that many executives perceive training and development programmes as respite from work rather than a true chance to change and develop.

9.3.2 The Moderating role of Developmental Readiness

Hypothesis 3 predicted that DR plays a moderating role in the developmental process. Moderation was supported as expected. Developmental Readiness is expected to accelerate change. That is the most important argument presented in this thesis. Even when conceptualised differently (Avolio & Hannah, 2008, 2009; Hannah & Avolio, 2010), the basic premise is still the same: DR can help explain why the same interventions have different effects on different people. More specifically, DR moderates development such that the higher one's Developmental Readiness, the more development incurred from training and developmental interventions.

The results warrant comment, though, as they were not entirely as expected. It seems that people with higher Developmental Readiness do tend to develop more than their (control) counterparts when they are offered a formal developmental opportunity. On the other hand, the patterns shown by those low on Developmental Readiness are somewhat surprising. Control group members with low developmental readiness showed more development than those with high DR, and more development than their intervention group counterparts!

It may be that those with low DR tend not to attach any importance to developmental programme potential benefits, and may only be browsing through to

get a diploma or degree (or even just pass a course in the case of students), whereas when not offered (or seeking) any developmental opportunity, the natural process of learning by doing, learning on-the-job, and "osmosis" from life challenges and activities results in development anyway, regardless of developmental readiness. It may be that developmental readiness only plays a role when clear developmental opportunities are offered. Then again, this may also be the result of particularities of these control groups.

Another plausible explanation for this could be that bright or high potential individuals may have the ability to capture and apply concepts and competencies faster than others, which then results in little improvement manifested. On the other hand, individuals with less potential or slower capabilities inherently have more room for development. In terms of results, this would be evident in more development shown, which may be misleading in terms of outcomes. Thus, it could be that those with higher levels of Developmental Readiness were more high potential people who had little gain to show, whereas those with lower levels of Developmental Readiness had more to develop on to start with, thus showing more development. This could explain the strange control group results.

Ad hoc analyses were conducted on each of self-awareness, self-regulation, and self-motivation alone. This would lend more understanding of the internal mechanisms of DR. Self-awareness and self-regulation did not single-handedly moderate development. However, self-motivation did. Self-awareness has been linked to development. Management and leadership developers believe that SA is an

important contributing factor to the development of individuals (Bourner, 1996). Moreover, SA generally is believed to impact performance positively (Fletcher & Bailey, 2003). Numerous calls for integrating activities that increase and deepen self-awareness in developmental initiatives have been made in the literature (e.g. Mirvis, 2008). Thus it is somewhat surprising that SA here did not have a significant impact. On the other hand, SR works more towards correcting behaviour, regulating cognitions, emotions, actions, and learning, which would probably manifest itself more in behavioural and attitudinal outcomes. Avolio (2004) posited that without self-regulated change, sustainability of development is highly unlikely. It may be that self-regulation alone may be differently related to development, i.e. may not play a moderating role alone, rather in conjunction with SA and SM, but may have another direct or indirect effect in isolation. For example, Yeow (2011) found that leaders who were offered a self-regulation training intervention exhibited greater development (manifested in improvement in competencies such as teamwork, planning, basic leadership, relationship management, and keeping others informed) than those who did not attend such training.

As for SM, it did moderate the developmental process significantly, exhibiting a similar pattern to that of DR. It may be that self-motivation plays a more central role in DR and development. SM has been found to influence and stimulate learning and development. For example, Bandura and Schunk (1981) found that self-motivation was important and effective in cultivating competencies. Learners should possess a certain degree of self-motivation if they are to actively participate and benefit from

developmental and learning experiences (Boekaerts, 1996). People learn and develop

competencies most when their motivation is high.

9.3.3 Personality Dispositions and Developmental Readiness

Hypothesis 4 predicted that personality dispositions will be associated with the

DR of an individual. 4a(i) posited that Neuroticism will have a curvilinear

relationship with DR such that mid-level N will be positively associated with DR and

high/low N negatively associated with DR, and 4a(ii) posited a negative relationship

between the two. Neither of the two hypotheses was supported. This was surprising,

but it seems that Neuroticism as a disposition does not directly affect developmental

readiness, perhaps so because of the often contradictory associations between

Neuroticism and DR factors. For example, Neuroticism may be negatively associated

with self-awareness because of its negative relationship to self-absorption, self-

assessment (Renn et al., 2005), self-management (Renn et al., 2009) and self-concept

clarity (Campbell et al., 1996). On the other hand, Neuroticism is positively

associated with self-consciousness (McCrae & John, 1992), indicative of higher self-

awareness. Neuroticism is then negatively related to self-regulation (Bucker &

Poutsma, 2010) and control. Furthermore, Neuroticism has been positively associated

with performance as a result of the negative emotionality experienced when facing

highly challenging situations (Tamir, 2005). Thus this contradictory pattern of

associations with constructs forming or related to DR may be the reason for the weak

relationships emerging in this study.

Hypothesis 4b predicted that no direct relationship would exist between Extraversion and DR. This was confirmed. This is in line with studies that have found Extraversion to be a main driver for social competencies rather than awareness or goal orientation, for example, (c.f. Boyatzis et al., 2000) or resulting from a need for association rather than achievement (Steel & Konig, 2006) and others that have expected no associations with DR-related constructs (c.f. Steel, 2007).

A positive relationship between Openness to Experience and DR was hypothesised in 4c, and was supported. The relationship found in these results was not quite as strong relative to the other dispositions, but significant nonetheless. It may be because of its weaker relationship to self-awareness and self-regulation constructs (c.f. Campbell et al., 1996; Steel, 2007).

Hypothesis 4d predicted that Agreeableness would be positively related to DR, and was supported as expected. This is again in line with the few studies that have linked Agreeableness to self-awareness, self-regulation, and self-motivation constructs (c.f. Campbell et al., 1996; Boyatzis et al., 2000; Steel, 2007).

Finally, hypothesis 4e predicted that Conscientiousness would be positively related to DR and was supported too. This again lends further support to previous studies that have found associations with self-regulation (Hoyle, 2006), self-motivation (Barrick & Mount, 1991), and self-awareness constructs (Campbell et al., 1996).

Personality has been linked to many different constructs and outcomes in the literature. This study's results are in line with such studies that link personality dispositions with performance and development, with self-awareness, self-motivation, and self-regulation. Certain personality dispositions make one more prone to look for and experiment with developmental experiences, and more prone to experience them positively and actively. This propensity impacts directly on their developmental readiness. Although this seems intuitive, no studies exist that have dealt directly with this issue, and thus this study represents a first step in exploring this relationship.

Ad hoc analyses conducted exploring the relationships between personality dispositions and each individual DR constituent showed significant associations between them. Extraversion was positively related to self-regulation. Agreeableness was positively related to all three. Conscientiousness was positively related to self-regulation and self-motivation. Neuroticism was positively related to self-awareness and negatively related to self-regulation. Finally, Openness to Experience was positively related to self-awareness and self-motivation. These results are consistent with the literature. One noticeable point is that relationships with self-motivation seem to most closely mimic relationships to DR.

9.3.4 Individual Values and Developmental Readiness

Hypothesis 5 predicted a positive association between individual value orientations and DR. Self-enhancement (5a) and Openness to Change (5b) were expected to be positively related to DR, while Self-Transcendence (5c) and Conservation (5d) were expected to be negatively related to DR. Only hypothesis 5d

was supported, linking Conservation significantly to DR. Furthermore, a Closed Orientation (5e) and an Open Orientation (5f) were also expected to be negatively and positively related to DR respectively. These were supported.

According to these results, only having a conservative orientation has a bearing on developmental readiness. Results of value priorities when tested individually are somewhat surprising, in that values are motivational drivers that guide attitudes, behaviour, and decisions (Rohan, 2000; Roe & Ester, 1999). However, when operationalised at a higher level (Closed and Open Orientation), results are consistent with expectations. It may be that a more general approach has more predictive value than individual priorities in isolation.

Ad hoc analyses conducted on each individual DR factor yielded the following: Conservation was significantly associated with SR and SM, while Self-Transcendence, Openness to Change, and Self-Enhancement were associated with none. However, a Closed Orientation was significantly associated with SR and SM, and an Open Orientation with SM. Again, similar patterns emerged, with the same conclusions as associations with DR.

9.3.5 Personality Dispositions and Competencies

Hypothesis 6 posited a direct relationship between personality and competencies. All personality dispositions were significantly related to competencies, except for Neuroticism. Personality has been linked to leadership (c.f. Hogan &

Kaiser, 2005; Judge et al., 2002) as well as to skill acquisition (Hough & Oswald, 2008), so this is consistent with theoretical and empirical findings in the literature.

9.3.6 Developmental Readiness as Mediator between Personality and Competencies

Hypothesis 7 suggested that DR will mediate between personality and competencies, thus that DR will predict competency level over and above the Big Five. Regression results showed a significant mediating relationship, but Sobel tests were not significant below the .05 level. Some studies have reported mediation above the .05 but below the .10 level, but general consensus seems to be below the .05 level. Thus the evidence is not strong of a mediating role of DR.

9.3.7 Students versus Executives

It was proposed in hypothesis 2 that students will have lower competency levels than executives (2a), and that students will develop competencies at a lesser rate than executives (2b). Students did have lower competency levels at pre-test, but the rate of development was not significantly different across the two groups. The first hypothesis and its results are quite intuitive. As for the rate of development, student or executive status does not seem to have any bearing.

Additionally, hypothesis 8 proposed that value orientations would not be significantly associated with DR in the case of students (8a), but will be in the case of executives (8b). This is because values seem to stabilise in adulthood, and late early adulthood is still a time where values are being formed and adopted, and since values

tend not always to be too salient (Meglino & Ravlin, 2002), then they are expected to be even less so for younger adults. This was confirmed in that no relationships were apparent in the student sample, whereas Conservation, Self-Enhancement, Closed, and Open Orientation were all significantly related to DR in the executive sample, in the hypothesised directions. Thus values play a more important role in later adulthood than in early adulthood.

9.3.8 Relationships over Time

It was worth checking whether the relationships tested held over time. The same patterns of relationships emerged for time 2 in the case of the relationships of personality and values with DR, with an added relationship between Neuroticism and DR and Self-Transcendence and DR (though the latter was in the opposite direction than expected). However, no significant associations were found between personality and competencies at time 2.

9.3.9 Control Variables

Control variables included in all stages of the study were the following: country, age, sex (gender), education, tenure, previous training, student or executive, and experimental condition. These were included on theoretical bases, discussed in chapter 5. Results of analyses revealed that in most cases, with a few exceptions, none of the control variables had any significant effect on the dependent variables. Exceptions were the following: sex (gender) had a significant effect in the case of the relationship between values and DR, and in the case of DR (not) mediating the relationship between personality and competencies. Age had an effect in the case of

the relationship between personality and self-awareness. Country (the UK sample) had an effect in the case of the relationship between personality and competencies, and between personality and self-motivation. Student or executive status had an effect in the case of the relationship between Closed Orientation and self-regulation, as well as in the moderating role of self-motivation on the developmental process. Finally, when time 1 competencies were controlled for, these had a significant effect in the case of the moderating role of DR and SR on development.

Gender has been found to have an effect on social and emotional intelligence and competencies (Hopkins and Bilimoria, 2008) as well as on the ability to learn new skills (Hall, 2004). Thus the effect found on competencies and DR is consistent with previous findings. Why it has an effect on DR only in the case of values but not personality is an issue to study further. It may be that personality is a stronger predictor of DR regardless of demographics, whereas with values, gender is more important. In fact, gender differences in personality dispositions were found to be relatively small but with observed variations between cultures in a study by Costa, Terracciano, and McCrae (2001). As for gender differences in value orientations, these have been found by some to be insignificant (c.f. Prince-Gibson & Schwartz, 1998; Van Lange, 1999) and by others to be substantial (c.f. Beutel & Mooney-Marini, 1995). As for age and its effect on self-awareness in the case of personality, this makes sense intuitively. With age and maturity comes more self-awareness given the right conditions and personality dispositions. Concerning the effect of country (specifically, the UK sample) on competencies and self-motivation in the case of personality, national background has been shown to affect the ability to learn (Hall,

2004), thus the relationship to both. On the other hand, the UK sample was the largest, and it may be that the effect is an artefact of the sample composition. As for student and executive status, its effects show that differences exist and are significant between the two groups regarding the role of values in self-regulation, which was hypothesised, and the moderating role of self-motivation in development. Finally, starting level of competencies does seem to have bearing on development, and moderation was supported in the cases of DR and self-motivation when we partial out time 1 competencies.

9.3.10 Integration of Findings

This thesis set out to answer several research questions:

- What are the constituents of developmental readiness and in what way can they be measured?

- What role does an individual's developmental readiness play in that individual's learning trajectory and developmental process? Does developmental readiness accelerate development as suggested?

- What can help predict developmental readiness?

- What role do personality dispositions play in determining developmental readiness? What personality dispositions are more (or less) relevant to developmental readiness?

- What role do individual values play in predicting developmental readiness? What value orientations may enhance an individual's developmental readiness?

All the above questions were addressed and answered to the extent possible. The main findings of this thesis are the following: first, no additional development was evident for the intervention groups as compared to the control groups. Thus taking part in a developmental programme did not show evidence of any significant outcomes over and above the normal developmental trajectory. Second, DR was found to moderate the developmental process. This is a very important finding, which has broad implications, discussed in the following sections. DR does accelerate development, as was suggested by Avolio and Hannah (2008, 2009) and thus positions itself as an important construct within the broader leadership development framework. Third, some personality dispositions were found to significantly predict DR. Fourth, some individual values were also found to significantly predict DR, though their effect is stronger when combined with personality dispositions. Fifth, personality dispositions were found to predict competency levels, but DR was not found to mediate that relationship. Sixth, the relationships between DR and personality and values were found to hold over time. Finally, differences were found between students and executives on some of the above relationships, most notably with respect to competency levels and the predictive role of individual values. Implications of these findings for both theory and practice are discussed in the next section.

9.4 Contributions of this Research

9.4.1 Implications to Theory

The findings of this research have several theoretical implications that both inform current theory and provide further avenues for future research in the area of leadership development.

First, this study contributes to the training and development effectiveness literature in that it questions whether the right programmes are being offered and whether they do deliver on what they claim to offer. As was discussed earlier, often conflicting findings result from such studies, raising the question of whether training and developmental programmes actually do deliver on promised results or not. This is yet another study suggesting that they do not, at least not always. This at least challenges assumptions underlying much of the leadership development literature that development programmes work. More systematic and in-depth evaluative measures should be taken (Avolio, 2004; Burgoyne et al., 2004), similar to the recent meta-analysis conducted by Avolio et al. (2009).

Second, the positive results which indicate that DR does moderate the developmental trajectory represent an important finding. This adds to the small body of existing literature which deals with developmental readiness, and highlights its importance. Whereas the focus more often than not is on developmental programmes, their design, quality, content, delivery methods, and length, and whereas puzzling findings regarding these programmes' effectiveness is an important issue to consider, maybe it is time the focus shifted somewhat. A focus on individual differences, on the

readiness, propensity, and predisposition to make the most of developmental interventions and to seek out such events is warranted. DR will help explain the variability found in developmental outcomes across individuals. The best developmental initiatives will fail if offered to the wrong people. Systematic assessment of individuals' readiness needs to be integrated within the evaluation of developmental programmes. Leadership development theory must be informed by individual characteristics, most notably by developmental readiness. The question of how we can get individuals to be more ready to develop must take precedence over questions concerning the mechanisms of leadership development. It is also arguable that the notion of developmental readiness extends much further than the leadership development arena to all other areas of learning and development, thus contributing to the wider learning and development literature too.

Third, both personality dispositions and individual values have been linked to several leadership and developmental outcomes. But rarely have their effects been studied together, and to my knowledge this is the first study linking them to developmental readiness. This study then adds a further contribution to the personality and values literature, as well as adding a further dimension to consider in leadership development studies. Furthermore, linking personality to competencies also adds to the understanding and relevance of personality to competencies and competency acquisition, also an issue to consider in leadership and leadership development, at least when approached from a competency perspective.

Finally, differences between students and executives, and between novices and experts exist. This has implications for the study of leadership development. Integrating these differences in theories and frameworks will likely result in better focus and more specialisation in the prescriptions suggested for developmental initiatives.

9.4.2 Implications for Practice

One of the underlying drivers behind this thesis was a desire to make it as practically relevant as possible. This is in response to calls from both academics and practitioners to make research accessible, relevant, and useful to practitioners. This is evident in recent efforts to highlight this issue by the Academy of Management, by advocates of evidence-based management, and by concerned researchers who remain in touch with the practitioner arena. This study's many practical implications are highlighted below.

First, where results from evaluations of developmental programmes are baffling, and where there is an ever-increasing range of (expensive!) choices, this study adds one more failure to find significant development due to training. Results from such studies need to go beyond the academic world and inform practice, such that programmes that do not deliver as promised are not invested in and other, more effective designs, methods, and deliveries adopted.

Second, teaching and learning, as well as the internalisation of learning, take place in different ways depending on the level of expertise (c.f. Tynjala, 1999; Rossano, 2003). Paying heed to these differences would certainly enhance the

learning and teaching experience for both instructors and learners, inform programme design and delivery matters, as well as increase the actual effectiveness regarding developmental outcomes.

Third, in addition to competency training and knowledge acquisition, work can be done that targets values, especially with younger students and novices, where the values needed for effective leadership can be made more salient and desirable. This would enact certain schemas which will become more salient in the value-formation process, especially for younger individuals in their formative stages. Needless to say, this brings in a very important ethical component that one cannot ignore. The intent is not to brainwash, but to help them choose the more "appropriate" values that would create the right conditions for *ethical* and effective leadership.

Fourth, an understanding of DR is likely to instigate more focused efforts to develop that readiness to learn in individuals at the earliest stages of their careers. These efforts could also start at the high school and undergraduate levels. Moreover, organisations would do well to foster such learning environments which would enhance the readiness of their employees. These would then be even more motivated to seek such developmental experiences and make maximum use of available ones.

Fifth, where programme design typically focuses on managerial and leadership competencies through the use of formal lecture or experiential methods, DR will help providers, be they trainers or universities, in the design and delivery of their programmes. This by gearing the focus towards self-awareness, self-regulation, and self-motivation, those meta-competencies that will ensure longer-term learning and

development. Thus DR would become the primary area targeted for development before leadership and management-specific interventions.

Sixth, this study has implications that directly concern HR managers and decision makers. This is relevant to selection, promotion, assessment, and developmental decisions, among others. Where job and training selection decisions are often arbitrary or focus only on perceived high-flyers, DR will offer a tangible way for assessment that will inform and help policy makers in setting procedures for selection and development. Thus rather than base decisions only on past or present performance, DR will encourage HR and decision makers to select individuals based on their potentiality and propensity to develop and learn. Ultimately, if there is an inclination or disposition in people towards learning leadership more effectively and efficiently based on developmental readiness, then that will become the basis for selection in succession planning and in development decisions. This means that even if people don't know or don't have all the skills needed for the next stage, if they have enough developmental readiness and are willing and able to keep growing in that area, then they are the people we want to promote, give higher responsibility to, and invest in their development since they're the ones most likely to be able to make the best use of that and thus perform better and exercise better leadership.

Seventh, a focus on DR as a precursor to development will hopefully also lessen the lag between investment and return on investment, where the latter is of primary concern to organisations in these turbulent economic times.

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Eighth, personality tests and profiling has been and still is a common and popular assessment tool in organisations (McFarland & Ryan, 2006), especially where selection decisions are made. Measuring personality now brings an added benefit: if future research confirms this study's results, then from personality we can then foretell an individual's developmental readiness and at least have an initial idea of who may be more prone to development. And since personality is relatively stable over time, especially from around the age of thirty onwards (Terracciano, Costa, and McCrae, 2006; Costa and McCrae, 1997; 2006), then at least some consistency is expected with regards to DR. Thus decisions based on personality dispositions will be expected to show good predictive ability over time.

Ninth, a good measure of DR may be the next HR tool after personality profiling. Once the developmental readiness of a person is known, then leadership attributes need not be measured at the onset anymore; rather based on individuals' DR, more focused developmental efforts can be offered, either to increase DR where it is low, or for more targeted competency (and other) development where DR is high.

Finally, every organisation has its own distinct culture and endorses particular values. Information from individual values can thus be used both to determine value compatibility with the organisation as well as the propensity for leadership and development. Checking individual value orientations could also inform the selection and developmental stages and decisions.

9.5 Limitations of This Study

Every study inherently has its limitations. This study is not exempt, and the following limitations need to be kept in mind when results are interpreted. First, in terms of sampling procedures, selection of participants was non-random. Assignment to conditions happened through self-selection (in the case of formal education programmes) and through administrative selection (in the case of executive education programmes). Ideally, a true experimental design would be better, offering more control over threats to validity that result from non-random assignment. Second, another potential limitation was the fact that this study had no control over selection-history, rivalry, and diffusion effects, particularly within the executive samples.

Third, part of the sample consisted of students. The largest part of the student sample consisted of individuals with at least some work experience, and mostly MBA students were studied, which makes them comparable to the executive sample. Nonetheless, a full executive sample would have been superior. Fourth, although smaller sample sizes are acceptable for experimental designs, the larger the sample, the more representative the study, thus a larger sample size especially at time 2 would have been desirable.

Fifth, and possibly the most important limitation, is the fact that only pre-test and post-test measurements were taken. The original three-wave study design proved impossible to conduct. Two-wave data has been argued to be too little to capture the information needed when studying development, depicting only a linear relationship which is likely not accurate (Rogosa et al., 1982; Ployhart & Vandenberg, 2010).

Time lags are also important for leadership development (Day et al., 2009), and ideally longitudinal studies should have three or more time collections. Of course, if time and resources were of little concern, a full pre- and post-MBA study could have been conducted in parallel to the executive programmes, as well as a third wave collection.

Sixth, leadership is multi-faceted (Day, 2000) and multi-dimensional (Day & Harrison, 2007), and leadership development is a multi-level process (Avolio, 2004; Day & Harisson, 2007). Approaching it only at the individual level as this study has done inherently loses some perspective. Ideally, studies must include the leader, relationships with peers, superiors, and subordinates, as well as organisational climate and culture. Seventh, another limitation lies with the measures used. Again due to constraints and challenges faced that inhibited the conduction of the original 360-degree feedback design, only self-report data was collected. Differences are usually apparent between self-perceptions and others' assessment of observed changes, due to different standards and perceptions that people hold about themselves and others (Boyatzis & Saatcioglu, 2008). Individuals may feel that they have changed much whereas the change is barely perceptible to others, and vice versa, where others may perceive a change that is not yet apparent to the individual. These differences also provide information about self-awareness.

Eighth, the scales used may have been less than ideal. No developmental readiness scale existed, thus the best available scales were combined. A direct and shorter measure of developmental readiness would have been more desirable.

Additionally, the questionnaires administered, especially at time 1, were long. This was unavoidable since many variables were being measured, including personality, values, developmental readiness, and desirable responding. Length of questionnaires decreases willingness to participate and increases the likelihood of boredom, which would affect the quality of responses and introduces the likelihood of method bias (Podsakoff et al., 2003). Shorter questionnaires would have been more ideal.

Ninth, there may be limitations due to the conceptualisation of this study. No study can cover the whole range of possible influences on the issue of concern, and thus there may have been overlooked potential influences and unincluded variables that I was unaware of. Tenth, a potential limitation could arise from the possibility of there being an alternative and better conceptualisation of developmental readiness.

Finally, quantitative research provides much information on the structure and interrelationships of variables and constructs. It provides good basis for generalisation and replication, as well as reliability and validity. The picture can never be complete when using only quantitative methods, though. Qualitative inquiry into the same areas of concern would surely add more depth and richness, as well as provide a more complete understanding of the processes, mechanisms, and relationships involved.

9.6 Suggestions for Future Research

It is the hope of this research to instigate much wider and more comprehensive future research. Many avenues are available. First, and most obviously, a replication of this study could be conducted. This could be done within different specific

industries, within different representative samples, and in different populations. Such studies would provide confirmation (or disconfirmation) of this study's results and conclusions.

Second, scale development of a good direct measure of developmental readiness would offer a very practical tool for assessment. This would be used in subsequent academic studies as well as in organisational HR contexts.

More systematic, coordinated, and longitudinal evaluative research spanning beyond the pre-test post-test design should be conducted, both in terms of DR and its changes as well as general competency development and programme effectiveness. Longitudinal studies with at least three-wave collection would add more information and insight into the developmental process, and rate and form of change, using methods such as latent variable growth curve modelling. Moreover, meta-analytic, evidence-based research would be ideal.

The conduction of qualitative inquiry into the mechanisms of DR, the mechanisms of learning and development, and the qualitative evaluation of learning and changes would add much to the richness and depth of this study and other leadership development studies. This would further inform and enhance the whole area of leadership development, providing for a more comprehensive and integrative theory of leadership development.

More detailed studies that encompass the nature of jobs, the particular challenges faced within organisations and sectors, and other relevant factors that

enhance or inhibit the learning experience and development would also help to further refine and make whole the picture. Future studies could take a multi-dimensional, multi-level perspective that includes the whole context within which leadership and leadership development occur.

It would also be interesting to understand further the internal mechanisms underlying DR. Studies investigating how exactly self-awareness, self-motivation, and self-regulation influence the developmental process, both individually and in their interactions to form the developmental readiness of an individual, would further advance our understanding of DR.

Plenty of developmental interventions are available, making investment choices more difficult. Studies can be conducted that include other types of interventions, both generalist and tailor-made ones. Furthermore, interventions that specifically enhance developmental readiness can be identified and highlighted.

This study could be extended to include a cultural element, especially ones that include cultural values and their effects on developmental readiness. An interesting question to ask is whether there exists a cultural element or certain societal values that may make certain types of interventions more or less effective, or that enhance or inhibit the role of developmental readiness. Is there any suppression of developmental readiness or developmental outcomes due to culture, for example?

Other questions may be asked that would lead to further studies as well. At the individual level, could someone have a high level of competency in a certain area, but

if that competency is not part of that person's leadership schema, then is it enacted? If individuals have the right personality dispositions but hold competing values to their organisations, how does this affect their DR and thus their developmental trajectory?

Finally, one way in which this study was to be conducted at the onset was use schema-mapping, i.e. to get participants to map out leadership schemas before attending a leadership development intervention and after. This would then be compared to expert schemata, and similarities/dissimilarities assessed as well as changes in schema due to interventions. However, due to time and logistical constraints, this was not possible for this research. It would be interesting to investigate such options in future and study how schemas are changed due to development, thus targeting the cognitive and meta-cognitive aspects of leadership development.

9.7 Conclusion

This present research aimed at providing a further addition to the existing frameworks underlying the study and practice of leadership development. Results indicate that Developmental Readiness is an important construct that must be included in studies investigating developmental interventions, their design, quality, methods of delivery, and outcomes. I hope that this study encourages the inclusion of individual differences and characteristics that accelerate leadership development and explain variance in developmental outcomes in future research.

Ultimately, leadership development is not limited to competencies and capability development (Riggio, 2008). It is important to keep the broader picture in

mind. Leadership development is comparable to a construction site. Many different materials are needed, many different tools are used, and the underlying plans include multiple perspectives and designs. Furthermore, construction is dependent on various people with different areas and levels of expertise. The combination of expertise, tools, and materials make for a synergy that produces a product that is both useful and pleasing. The same goes for leadership development.

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APPENDICES

Appendix 1 – Letter to Clients

Dear [Mr/Mrs XYZ],

Following your discussion with Mr. Jonathan Harvey of the Aston University Executive Education Programme, I understand that you have agreed to be contacted regarding potential research collaboration. It has come to my attention that your organisation has entered an agreement with Aston University whereby a number of delegates from your organisation attend Development Programmes provided by the University Executive Education Programme, headed by Dr. Michael Grojean.

I am a PhD student working under the supervision of Dr. Grojean. The focus of my dissertation is on Leadership Development. The purpose of my study is the understanding of individual development. When we understand more deeply how and why individuals develop, the mechanisms and complexities of that development, and the influences on and predictors of that development, then ways can be developed whereby (1) development programmes such as the one you have chosen will be made more effective, and (2) individuals more ready to develop can be targeted and developed at early stages of their careers.

I am writing to ask whether it may be possible for your delegates participating in the programme to take part in my research study, supervised by Dr. Grojean. The study is a longitudinal one consisting of three phases. This is to determine the degree and quality of change over a certain period of time. The first phase will take place at the onset of the programme, where they will be asked to complete a set of questionnaires, including a 360-degree feedback. The second and third phases will involve completing the same (but slightly shorter) questionnaire at the end of the programme and a few months later to determine sustainability of learning.

Additionally, at the end of the programme, participants will be asked to evaluate the tutors and programme. If they volunteer to, they will be given the chance to conduct an interview whereby they will be able to elaborate more on the quality of the programme they attended, the learning incurred, and other matters that they deem important. This is to help shed light on the quality of the programmes offered.

If (and only if) possible, and parallel to those participating in the development programme, I would also like to conduct the same survey with a comparable number of employees at your organisation with a similar profile but who are not participating and are not likely to participate in any development programme in the same time period.

This study, although slightly time-consuming for your delegates, will offer you several benefits. First and foremost would be an independent return on investment study for your organisation. You will be provided with uncontaminated reports on

progress and development incurred as a result of this programme. This is because each participant will receive a three-wave comprehensive 360-degree feedback assessment, as well as a direct indication of rate of progress and learning resulting from the programme and its sustainability a few months afterwards. Furthermore, if participants agree, you may wish to receive a complete profile for each participant detailing leadership and managerial capabilities, personality dispositions and individual values that make them more or less ready to develop leadership capabilities along their careers paths. Results of this study will also potentially help aid you in future in spotting individuals who are more ready to develop as early as at the selection level.

Finally, since your privacy and the privacy of your employees are of the utmost importance to me, all surveys and interviews will remain confidential, and access to data will only be authorised to my supervisors and myself. Data will only be stored in secure locations, both physically and virtually, either under lock and key or password and security protected respectively. Only my supervisor and I will have access to the data, and a very select few who will be directly aiding in the data processing and analysis stages. All reference to names or companies will only be held at the data collection and analysis stage where they are needed to keep track of data for the same individuals. When that stage is completed and this is no longer needed, all means of identification will be discarded. Furthermore, no mention of company or individual names or information will be made when research findings are disseminated either in the PhD dissertation, journal articles, conference presentations, or any other communication of my research findings.

Under the Data Protection Act (1998) I am bound to take strict protective measures to ensure the safeguarding of all data collected and to ensure that no breach of your company's privacy (or any individual thereof) occurs, and I commit to this. One point remains, and that is that I am an external student currently resident in Lebanon, commuting to and from the UK. Thus the data will have to be stored at my place of residence. The same rules or privacy/confidentially and data protection apply and no one except myself will have access to the data collected. I hope to obtain your permission to go ahead with this study nonetheless.

While it is essential for the research that participants take part throughout the study, they are free to withdraw at any time without penalty. Their participation is completely voluntary and no one will suffer any disadvantage if they choose not to participate. Moreover, should anyone wish to raise any concerns, complaints, issues, or suggestions, or should anyone wish to obtain more information, I will be available for the duration of the study and after it has been completed, contactable by phone and email, as well as by appointment should anyone wish to meet with me.

I sincerely hope to obtain your full organisational support for this research study which is of utmost importance to me and which I hope will prove equally beneficial to your organisation.

Looking forward to obtaining your approval and collaborating with you,

Yours faithfully,

Mariam Shebaya
Doctoral Researcher
Work and Organisational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Aston University

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Appendix 2 – Informed Consent Form (Executive Education

Participants)

Dear Participant,

Thank you for your interest in helping this study move forward. This study is part of my doctoral dissertation towards a PhD in Work and Organisational Psychology at Aston Business School, Aston University, UK.

This study's purpose is to understand and further enhance leadership development efforts, vitally important for organisations nowadays. It explores the influences of and relationships between personality, values, and the readiness of individuals to develop, in the hope of ameliorating the effectiveness of development efforts.

If you decide to participate in this study, this will involve the stages outlined hereafter. You have already agreed to participate in a management development programme endorsed by your organisation. If you are not participating in any development programme, then you have been selected as part of a control group. You will be asked to fill out a survey at the beginning, end, and possibly a few months after completion of the programme. Since your privacy is a primary concern for us, all responses and results will remain confidential, and access to data will only be authorised to myself, my supervisors, and a select few who will aid in data analysis. This is in compliance with the 1998 Data Protection Act, developed to safeguard all participants' rights and privacy. If **and only if** you so wish, your leadership capabilities and development profile may be shared with you, but in no way will any of your answers be used to evaluate your performance in the programme.

Whilst it is essential to this study that you plan to commit to the duration of the study, should you wish to withdraw at any point for any reasons whatsoever, you may do so without any negative consequences. Your participation is completely voluntary, and it is your right to ask for more information, raise any concerns or complaints, and point out any issues that are of importance to you.

When the development programme is over, you may be asked to take part in an interview session where you may wish to discuss your learning process, the programme you went through, the trainers, and provide any feedback you may have in mind. This would help me ensure consistency across programmes for all involved in this study, and finally listen to any comments and concerns raised by any participants. You may or may not wish to take part in any interview, and it is again your full right to decline.

Aston University

Information on this page has been removed for data protection purposes

Thank you again for participating in this study,

Best Regards

Mariam Shebaya
Doctoral Researcher
Work and Organisational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Appendix 3 – Informed Consent Form (Students)

Dear Student,

Thank you for your interest in helping this study move forward. This study is part of my doctoral dissertation towards my PhD in Work and Organisational Psychology at Aston University, UK. This study's purpose is to understand and further enhance leadership development efforts. It explores the influences of and relationships between personality, values, and the readiness of individuals to develop, in the hope of further enhancing the effectiveness of leadership development efforts.

If you decide to participate, this will involve the stages outlined hereafter. You will take part either as a student in the Leadership course or as a student in another course (control group). You will be asked to fill out a survey at the beginning and end of your course. Since your privacy is a primary concern for me, all responses and results will remain confidential, and access to data will only be authorised to myself, and my supervisor. NO NAMES will appear in the data analysis stage nor in the dissemination of any research findings. This is in compliance with the UK 1998 Data Protection Act, developed to safeguard all participants' rights and privacy.

If you so wish, you will be presented with a report highlighting your personality and readiness to develop profile, as well as your learning incurred during the leadership course (for those taking the latter course). NO information will be shared with your instructors, and IN NO WAY will any of your answers be used to evaluate or reflect your performance in the course. This is solely for my research.

Whilst it is essential to this study that you plan to commit to the duration of the study (i.e. to fill out the two surveys), should you wish to withdraw at any point for any reasons whatsoever, you may do so without any negative consequences. Your participation is completely voluntary, and it is your right to ask for more information, raise any concerns or complaints, and point out any issues that are of importance to you. If you do complete the full study, however, you will be entered in a draw for an IPod Touch as a token of thanks.

If you would like a personalised report on your data, if you would like to receive a summary of results of the study, or any other information or clarifications, please email me at mariam@shebaya.com and I would be pleased to provide you with any information.

Thank you again for participating in this study, and looking forward to collaborating together,

Best Regards,

Mariam Shebaya
Doctoral Researcher, Aston Business School
Work and Organisational Psychology

Appendix 4 – Informed Consent Form (Control Groups)

Dear Participant,

Thank you for your interest in helping this study move forward. This study is part of my doctoral dissertation towards a PhD in Work and Organisational Psychology at Aston Business School, Aston University, UK.

This study's purpose is to understand and further enhance leadership development efforts, vitally important for organisations nowadays. This study explores the influences of and relationships between personality, values, and the readiness of individuals to develop, in the hope of further enhancing the effectiveness of leadership development efforts.

If you decide to participate in this study, this will involve the stages outlined hereafter. You are being asked to participate as a member of a control group, since you are now not taking part in (or expecting to take part in the near future) any particular developmental initiative. You will be asked to fill out surveys at three time points, each around 6-12 months apart. Since your privacy is a primary concern for us, all responses and results will remain confidential, and access to data will only be authorised to myself, my supervisor(s), and a select few who will aid in data analysis. This is in compliance with the 1998 Data Protection Act, developed to safeguard all participants' rights and privacy. If **and only if** you so wish, your leadership capabilities and development profile may be shared with you.

Whilst it is essential to this study that you plan to commit to the duration of the study, should you wish to withdraw at any point for any reasons whatsoever, you may do so without any negative consequences. Your participation is completely voluntary, and it is your right to ask for more information, raise any concerns or complaints, and point out any issues that are of importance to you.

If you would like a personalised report on your data, if you would like to receive a summary of results of the study, or any other information or clarifications, please contact me at +961-3-560254 or email me at mariam@shebaya.com and I would be pleased to provide you with any information.

Thank you again for participating in this study, and looking forward to collaborating together,

Best Regards

Mariam Shebaya
Doctoral Researcher
Work and Organisational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET, UK

Appendix 5 – Online Informed Consent Forms

Pilot Study 1 (LCP)

Dear Participant,

Thank you for your interest in helping this study move forward. This study is part of my doctoral dissertation towards a PhD in Work and Organisational Psychology at Aston Business School, Aston University, UK.

This study's purpose is to understand and further enhance leadership development efforts, vitally important for organisations nowadays. This study explores the influences of and relationships between personality, values, and the readiness of individuals to develop, in the hope of further enhancing the effectiveness of leadership development efforts.

This first step is to test the validity of the survey instrument which will be used subsequently. You will be asked to complete a survey which should take between 5-10 minutes. All answers will remain anonymous and results confidential, and access to data will only be authorised to myself, my supervisor(s), and a select few who will aid in data analysis. For consistency purposes, you will be given a code which will be associated with your name only for the period of data collection and will only be accessible to myself. As soon as data is complete, all names will be promptly discarded.

Your participation is completely voluntary, and it is your right to ask for more information, raise any concerns or complaints, or withdraw from the study.

If you would like a personalised report on your data or any other information or clarifications, please contact me at +961-3-560254 or email me at mariam@shebaya.com and I would be pleased to provide you with the information you require.

Thank you again for participating in this study,

Best Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organisational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Pilot study 2 (DR)

Dear Participant,

Thank you for agreeing to participate in this project!

This survey consists of three parts, with questions pertaining to (1) general managerial competencies commonly identified as important in organisations, (2) regulatory processes within each individual, and (3) motivation to learn.

Please take the time to read each item carefully, and respond by rating each on a spectrum ranging from "strongly disagree" to "strongly agree". Please follow instructions closely. You may also choose to leave some questions unanswered (N/A) if you believe they do not apply.

The survey should take around 20 minutes to complete. Your responses will remain completely confidential. Your privacy and anonymity will be safeguarded in compliance with the 1998 UK Data Protection Act.

If you would like to know more about this project, or if you have any questions, please do not hesitate to contact me at +961-3-560254 or mariam@shebaya.com .

Thank you very much for your assistance and participation in this project.

Best Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organisational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Online Survey – Main study

Dear Participant,

Thank you for agreeing to participate in this project!

This survey consists of several parts, with questions pertaining to different areas such as personality, values, general managerial competencies commonly identified as important in organisations, regulatory processes in individuals, and training activities...

Please take the time to read instructions and items carefully, and respond by rating each on the spectrum provided. Please follow instructions closely. You may also choose to leave some questions unanswered (N/A) if you believe they do not apply.

The survey should take around 30 minutes to complete. Your responses will remain completely confidential. Although you are asked for your name, this is only for the sake of linking your first response to the second. Please do provide your name otherwise data cannot be linked together, but rest assured that your privacy and anonymity will be very carefully safeguarded in compliance with the UK 1998 Data Protection Act.

If you would like to know more about this project, or if you have any questions, please do not hesitate to email me at mariam@shebaya.com.

Thank you very much for your assistance and participation in this project.

Best Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organisational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Appendix 6 – Questionnaires

Time 1 Executive Questionnaire

Learning and Development
Questionnaire Form

Welcome!

Dear Participant,

Thank you for agreeing to participate in this project!

This survey consists of several parts, with questions pertaining to different areas such as personality, values, general competencies, regulatory processes, and training activities...

Please take the time to read instructions and items carefully, and respond by rating each on the spectrum provided. Please follow instructions closely. You may also choose to leave some questions unanswered if you believe they do not apply.

The survey should take around 25 minutes to complete. Your responses will remain completely confidential. Although you are asked for your name, this is only for the sake of linking your response at the beginning and end of the program. Please DO provide your name otherwise data cannot be linked together, but rest assured that your privacy and anonymity will be safeguarded in compliance with the UK 1998 Data Protection Act.

If you would like to know more about this project, or if you have any questions, please do not hesitate to email me at mariam@shebaya.com.

Thank you very much for your assistance and participation in this project.

Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organizational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Name:

Email

Are you on a Development Program
offered by Aston Executive Education?
  O Yes
  O No

Instructions

On the following page, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Mini-IPIP

	Very Inaccurate	Moderately Inaccurate	Neither Inaccurate nor Accurate	Moderately Accurate	Very Accurate
Am the life of the party.	O	O	O	O	O
Sympathize with others' feelings.	O	O	O	O	O
Get chores done right away.	O	O	O	O	O
Have frequent mood swings.	O	O	O	O	O
Have a vivid imagination.	O	O	O	O	O
Don't talk a lot.	O	O	O	O	O
Am not interested in other people's problems.	O	O	O	O	O
Often forget to put things back in their proper place.	O	O	O	O	O
Am relaxed most of the time.	O	O	O	O	O
Am not interested in abstract ideas.	O	O	O	O	O
Talk to a lot of different people at parties.	O	O	O	O	O
Feel others' emotions.	O	O	O	O	O
Like order.	O	O	O	O	O
Get upset easily.	O	O	O	O	O
Have difficulty understanding abstract ideas.	O	O	O	O	O
Keep in the background.	O	O	O	O	O
Am not really interested in others.	O	O	O	O	O
Make a mess of things.	O	O	O	O	O
Seldom feel blue.	O	O	O	O	O
Do not have a good imagination.	O	O	O	O	O

Instructions

Using the scale as a guide, indicate a number beside each statement to indicate how true it is.

BIDR

	+ 1 Not True	+ 2	+ 3	+ 4 Somewhat True	+ 5	+ 6	+ 7 Very True
My first impressions of people usually turn out to be right.	O	O	O	O	O	O	O
It would be hard for me to break any of my bad habits.	O	O	O	O	O	O	O
I don't care to know what other people really think of me.	O	O	O	O	O	O	O
I have not always been honest with myself.	O	O	O	O	O	O	O
I always know why I like things.	O	O	O	O	O	O	O
When my emotions are aroused, it biases my thinking.	O	O	O	O	O	O	O
Once I've made up my mind, other people can seldom change my opinion.	O	O	O	O	O	O	O

BIDR

	+ 1 Not True	+ 2	+ 3	+ 4 Somewhat True	+ 5	+ 6	+ 7 Very True
I am not a safe driver when I exceed the speed limit.	O	O	O	O	O	O	O
I am fully in control of my own fate.	O	O	O	O	O	O	O
It's hard for me to shut off a disturbing thought.	O	O	O	O	O	O	O
I never regret my decisions.	O	O	O	O	O	O	O
I sometimes lose out on things because I can't make up my mind soon enough.	O	O	O	O	O	O	O
The reason I vote is because my vote can make a difference.	O	O	O	O	O	O	O
My parents were not always fair when they punished me.	O	O	O	O	O	O	O
I am a completely rational person.	O	O	O	O	O	O	O
I rarely appreciate criticism.	O	O	O	O	O	O	O
I am very confident of my judgments	O	O	O	O	O	O	O
I have sometimes doubted my ability as a lover.	O	O	O	O	O	O	O
It's all right with me if some people happen to dislike me.	O	O	O	O	O	O	O
I don't always know the reasons why I do the things I do.	O	O	O	O	O	O	O

BIDR - continued

	+ 1 Not True	+ 2	+ 3	+ 4 Somewhat True	+ 5	+ 6	+ 7 Very True
I sometimes tell lies if I have to.	O	O	O	O	O	O	O
I never cover up my mistakes.	O	O	O	O	O	O	O
There have been occasions when I have taken advantage of someone.	O	O	O	O	O	O	O
I never swear.	O	O	O	O	O	O	O
I sometimes try to get even rather than forgive and forget.	O	O	O	O	O	O	O
I always obey laws, even if I'm unlikely to get caught.	O	O	O	O	O	O	O
I have said something bad about a friend behind his/her back.	O	O	O	O	O	O	O
When I hear people talking privately, I avoid listening.	O	O	O	O	O	O	O
I have received too much change from a salesperson without telling him or her.	O	O	O	O	O	O	O
I always declare everything at customs.	O	O	O	O	O	O	O
When I was young I sometimes stole things.	O	O	O	O	O	O	O
I have never dropped litter on the street.	O	O	O	O	O	O	O
I sometimes drive faster than the speed limit.	O	O	O	O	O	O	O
I never read sexy books or magazines.	O	O	O	O	O	O	O

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BIDR - continued

	+ 1 Not True	+ 2	+ 3	+ 4 Somewhat True	+ 5	+ 6	+ 7 Very True
I have done things that I don't tell other people about.	O	O	O	O	O	O	O
I never take things that don't belong to me.	O	O	O	O	O	O	O
I have taken sick-leave from work or school even though I wasn't really sick.	O	O	O	O	O	O	O
I have never damaged a library book or store merchandise without reporting it.	O	O	O	O	O	O	O
I have some pretty awful habits.	O	O	O	O	O	O	O
I don't gossip about other people's business.	O	O	O	O	O	O	O

Instructions

Here we briefly describe some people. Please read each description and think about how much each person is or is not like you. Put an X in the box to the right that shows how much the person in the description is like you.

HOW MUCH LIKE YOU IS THIS PERSON?

PVQ-G1

	Very much like me	Like me	Somewhat like me	A little like me	Not like me	Not like me at all
Thinking up new ideas and being creative is important to this person. This person likes to do things in his/her own original way.	O	O	O	O	O	O
It is important to this person to be rich. This person wants to have a lot of money and expensive things.	O	O	O	O	O	O
This person thinks it is important that every person in the world be treated equally. This person believes everyone should have equal opportunities in life.	O	O	O	O	O	O
It's very important to this person to show his/her abilities. This person wants people to admire what s/he does.	O	O	O	O	O	O
It is important to this person to live in secure surroundings. This person avoids anything that might endanger his/her safety.	O	O	O	O	O	O
This person thinks it is important to do lots of different things in life. This person always looks for new things to try.	O	O	O	O	O	O
This person believes that people should do what they're told. This person thinks people should follow rules at all times, even when no-one is watching.	O	O	O	O	O	O

PVQ-G1

	Very much like me	Like me	Somewhat like me	A little like me	Not like me	Not like me at all
It is important to this person to listen to people who are different from his/her. Even when this person disagrees with them, s/he still wants to understand them.	O	O	O	O	O	O
This person thinks it's important not to ask for more than what you have. This person believes that people should be satisfied with what they have.	O	O	O	O	O	O
This person seeks every chance s/he can to have fun. It is important to this person to do things that give him/her pleasure.	O	O	O	O	O	O
It is important to this person to make his/her own decisions about what s/he does. This person likes to be free to plan and to choose his/her activities for him/herself.	O	O	O	O	O	O
It's very important to this person to help the people around him/her. This person wants to care for their well-being.	O	O	O	O	O	O
Being very successful is important to this person. This person likes to impress other people.	O	O	O	O	O	O
It is very important to this person that his/her country be safe. This person thinks the state must be on watch against threats from within and without.	O	O	O	O	O	O
This person likes to take risks and is always looking for adventures.	O	O	O	O	O	O
It is important to this person always to behave properly. This person wants to avoid doing anything people would say is wrong.	O	O	O	O	O	O
It is important to this person to be in charge and tell others what to do. This person wants people to do what s/he says.	O	O	O	O	O	O
It is important to this person to be loyal to one's friends. This person wants to devote him/herself to people close to him/her.	O	O	O	O	O	O
This person strongly believes that people should care for nature. Looking after the environment is important to this person.	O	O	O	O	O	O
Religious belief is important to this person. This person tries hard to do what his/her religion requires.	O	O	O	O	O	O

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PVQ-G2

	Very much like me	Like me	Somewhat like me	A little like me	Not like me	Not like me at all
It is important to this person that things be organized and clean. This person really does not like things to be a mess.	O	O	O	O	O	O
This person thinks it's important to be interested in things. This person likes to be curious and to try to understand all sorts of things.	O	O	O	O	O	O
This person believes all the worlds' people should live in harmony. Promoting peace among all groups in the world is important to this person.	O	O	O	O	O	O
This person thinks it is important to be ambitious. This person wants to show how capable s/he is.	O	O	O	O	O	O
This person thinks it is best to do things in traditional ways. It is important to this person to keep up the customs s/he has learned.	O	O	O	O	O	O
Enjoying life's pleasures is important to this person. This person likes to 'spoil' him/herself.	O	O	O	O	O	O
It is important to this person to respond to the needs of others. This person tries to support those s/he knows.	O	O	O	O	O	O
This person believes s/he should always show respect to his/her parents and to older people. It is important to this person to be obedient.	O	O	O	O	O	O
This person wants everyone to be treated justly, even people s/he doesn't know. It is important to this person to protect the weak in society.	O	O	O	O	O	O
This person likes surprises. It is important to this person to have an exciting life.	O	O	O	O	O	O
This person tries hard to avoid getting sick. Staying healthy is very important to this person.	O	O	O	O	O	O
Getting ahead in life is important to this person. This person strives to do better than others.	O	O	O	O	O	O
Forgiving people who have hurt this person is important to him/her. This person tries to see what is good in them and not to hold a grudge.	O	O	O	O	O	O
It is important to this person to be independent. This person likes to rely on him/herself.	O	O	O	O	O	O

PVQ-G2

	Very much like me	Like me	Somewhat like me	A little like me	Not like me	Not like me at all
Having a stable government is important to this person. This person is concerned that the social order be protected.	O	O	O	O	O	O
It is important to this person to be polite to other people all the time. This person tries never to disturb or irritate others.	O	O	O	O	O	O
This person really wants to enjoy life. Having a good time is very important to this person.	O	O	O	O	O	O
It is important to this person to be humble and modest. This person tries not to draw attention to him/herself.	O	O	O	O	O	O
This person always wants to be the one who makes the decisions. This person likes to be the leader.	O	O	O	O	O	O
It is important to this person to adapt to nature and to fit into it. This person believes that people should not change nature.	O	O	O	O	O	O

Instructions

Please answer the following questions by marking the response that best describes how you are NOW, not how you wish to be.

There are no right or wrong answers. Work quickly and don't think too long about your answers.

SSRQ

	N/A	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree
I usually keep track of my progress toward my goals.	O	O	O	O	O	O
I have trouble making up my mind about things.	O	O	O	O	O	O
I get easily distracted from my plans.	O	O	O	O	O	O
I don't notice the effects of my actions until it's too late.	O	O	O	O	O	O
I am able to accomplish goals I set for myself.	O	O	O	O	O	O
I put off making decisions.	O	O	O	O	O	O
It's hard for me to notice when I've "had enough" (alcohol, food, sweets).	O	O	O	O	O	O
If I wanted to change, I am confident that I could do it.	O	O	O	O	O	O
When it comes to deciding about a change, I feel overwhelmed by the choices.	O	O	O	O	O	O

SSRQ

	N/A	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree
I have trouble following through with things once I've made up my mind to do something.	O	O	O	O	O	O
I don't seem to learn from my mistakes.	O	O	O	O	O	O

SSRQ

	N/A	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree
I can stick to a plan that's working well.	O	O	O	O	O	O
I usually only have to make a mistake one time in order to learn from it.	O	O	O	O	O	O
I have personal standards, and try to live up to them.	O	O	O	O	O	O
As soon as I see a problem or challenge, I start looking for possible solutions.	O	O	O	O	O	O
I have a hard time setting goals for myself.	O	O	O	O	O	O
I have a lot of willpower.	O	O	O	O	O	O
When I'm trying to change something, I pay a lot of attention to how I'm doing.	O	O	O	O	O	O
I have trouble making plans to help me reach my goals.	O	O	O	O	O	O
I am able to resist temptation.	O	O	O	O	O	O
I set goals for myself and keep track of my progress.	O	O	O	O	O	O

SSRQ

	N/A	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree
Most of the time I don't pay attention to what I'm doing.	O	O	O	O	O	O
I tend to keep doing the same thing, even when it doesn't work.	O	O	O	O	O	O
I can usually find several different possibilities when I want to change something.	O	O	O	O	O	O
Once I have a goal, I can usually plan how to reach it.	O	O	O	O	O	O
If I make a resolution to change something, I pay a lot of attention to how I'm doing.	O	O	O	O	O	O
Often I don't notice what I'm doing until someone calls it to my attention.	O	O	O	O	O	O
I usually think before I act.	O	O	O	O	O	O
I learn from my mistakes.	O	O	O	O	O	O
I know how I want to be.	O	O	O	O	O	O
I give up quickly.	O	O	O	O	O	O

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Instructions

This questionnaire asks you to respond to statements about your attitudes, opinions, and behaviors. Read each statement carefully, and decide whether or not the statement describes you. Using the scale at the top of each page indicate the degree to which the ENTIRE statement is true of you.

Some of the statements may refer to experiences you may not have had. Respond to these statements in terms of how true you think it WOULD BE of you.

PLEASE NOTE:
- There are no right or wrong answers. Simply describe yourself honestly and state your opinions accurately.

- In deciding on your answer, consider your life in general and not only the last few weeks or months.

- Deciding on an answer may be difficult for some of the statements. If you have a hard time deciding, choose the answer that is MOST true of you.

- Some of the items will seem repetitive. These are not meant to be trick questions. Do not look back at your previous answers, simply answer each question honestly.

MTQ 1

	Very UNTRUE of Me	UNTRUE of Me	Somewhat UNTRUE of Me	Somewhat TRUE of Me	TRUE of Me	Very TRUE of Me
When I become interested in something, I try to learn as much about it as I can.	O	O	O	O	O	O

Note: I have cut out the MTQ since I do not have permission to publish it.

Instructions LQ-W

Please indicate the degree to which you typically engage in the behaviors described below in your daily work activities. Be as honest as you can and describe yourself as you see yourself now and not as you would like to be. If not applicable please choose n/a.

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I consistently meet or exceed performance targets, manage cost effectively, set clear performance goals, and concentrate on key business priorities.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I am willing to compromise, accept criticism openly and non-defensively, and adapt my approach to situation and individuals.	O	O	O	O	O	O
I constantly seek more responsibility, am energetic, enthusiastic about business, highly motivated to advance, and take initiative.	O	O	O	O	O	O
I am good at judging others' strengths and weaknesses, use challenging assignments to promote development, promote feedback, and am genuinely interested in individual achievement.	O	O	O	O	O	O
I maintain a cooperative atmosphere in the team, find common ground, and know when conflict is healthy.	O	O	O	O	O	O
I understand how to make money in business, and negotiate with customers for win-win solutions.	O	O	O	O	O	O
I am a good public speaker, listen attentively, adapt style to suit audience, and write clearly and effectively.	O	O	O	O	O	O
I set challenging, meaningful goals for the team, communicate them, monitor progress, give feedback, and reward achievement.	O	O	O	O	O	O
I do not allow personal bias to influence decisions, work well with others, and promote diversity.	O	O	O	O	O	O
I generate new ideas, promote and handle needed change, involve others, promote experimentation with new ideas, and help team adjust to change.	O	O	O	O	O	O
I have confidence in others, am trusted, consider ethics of decisions, maintain confidentiality, accept responsibility for mistakes, and am consistent.	O	O	O	O	O	O
I give direct and timely feedback on performance and ensure employees have the information they need to do the job, and communicate upper management's opinion of the team.	O	O	O	O	O	O
I thoroughly understand the business, policies and procedures, am highly competent in the technical and functional aspects of the world, and stay informed about new practices and developments.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I command respect and attention, link team goals to mission, articulate a common vision/purpose; develop a sense of loyalty within the team, place priority on getting results, am comfortable in a position of authority, and role model company values.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I reward people for performance, give credit and praise for good work, inspire people to excel, and communicate confidence in my team.	O	O	O	O	O	O
I delegate effectively, to the lowest level appropriate, and encourage participation in decisions.	O	O	O	O	O	O
I persist in the face of obstacles and setbacks, complete projects, am willing to take a stand, and push hard when appropriate.	O	O	O	O	O	O
I am well organized, develop contingency plans, effectively plan and prioritise tasks, coordinate work with other parts of the organization, use resources effectively, and manage multiple projects.	O	O	O	O	O	O
I am approachable, tolerant of differences, and have good working relationships with team, peers & managers.	O	O	O	O	O	O
I involve the right people in decisions; have a good network of contacts, astute sense of organisational policies, am effective at influencing upper management, and negotiate persuasively.	O	O	O	O	O	O
I consider consequences, alternatives and different perspectives, confront problems promptly, am willing to make decisions when outcome is uncertain, and do not get sidetracked by irrelevancies.	O	O	O	O	O	O
I value and acknowledge the contribution of each team member, promote cooperation, avoid team rivalries, and ensure sufficient resources.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I understand my own strengths/weaknesses, learn from success and failure, seek feedback on performance and adapt behaviour in response, and pursue learning and self-development.	O	O	O	O	O	O
I clarify everyone's roles and responsibilities, ensure understanding of team goals, set clear expectations of performance, and explain how performance will be evaluated.	O	O	O	O	O	O
I am good at recruiting talented employees, ensure appropriate training, understand skills required in team, and take appropriate action with consistently poor performance.	O	O	O	O	O	O
I communicate a long term vision with short term performance goals, understand industry dynamics, effectively manage complex organisational change, and seek new revenue opportunities.	O	O	O	O	O	O
I maintain composure under stress, work effectively in ambiguous situations, and remain optimistic.	O	O	O	O	O	O
I maintain time effectively, do not over-commit, rarely miss deadlines, and do not get sidetracked.	O	O	O	O	O	O

RSMS

	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree
In social situations, I have the ability to alter my behavior if I feel that something else is called for	O	O	O	O	O	O
I am often able to read people's true emotions correctly through their eyes	O	O	O	O	O	O
I have the ability to control the way I come across to people, depending on the impression I wish to give them	O	O	O	O	O	O
In conversations, I am sensitive to even the slightest change in the facial expression of the person I'm conversing with	O	O	O	O	O	O
My powers of intuition are quite good when it comes to understanding others' emotions and motives	O	O	O	O	O	O
I can usually tell when others consider a joke to be in bad taste, even though they may laugh convincingly	O	O	O	O	O	O

RSMS

	Strongly Disagree	Disagree	Moderately Disagree	Moderately Agree	Agree	Strongly Agree
When I feel that the image I am portraying isn't working, I can readily change it to something that does	O	O	O	O	O	O
I can usually tell when I've said something inappropriate by reading it in the listener's eyes	O	O	O	O	O	O
I have trouble changing my behavior to meet the requirements of any situation I find myself in	O	O	O	O	O	O
I have found that I can adjust my behavior to meet the requirements of any situation I find myself in	O	O	O	O	O	O
If someone is lying to me, I usually know it at once from that person's manner of expression	O	O	O	O	O	O
Even when it might be to my advantage, I have difficulty putting up a good front	O	O	O	O	O	O
Once I know what the situation calls for, it's easy for me to regulate my actions accordingly.	O	O	O	O	O	O

Priv-SC

	Extremely Uncharacteristic of me	Uncharacteristic of me	Unsure	Characteristic of me	Extremely Characteristic of me
I reflect about myself a lot	O	O	O	O	O
I'm generally attentive to my inner feelings	O	O	O	O	O
I'm always trying to figure myself out	O	O	O	O	O
I'm constantly examining my motives	O	O	O	O	O
I'm alert to changes in my mood	O	O	O	O	O
I tend to scrutinize myself	O	O	O	O	O
Generally, I'm aware of myself	O	O	O	O	O
I'm aware of the way my mind works when I work through a problem	O	O	O	O	O
I'm often the subject of my own fantasies	O	O	O	O	O
I sometimes have the feeling that I'm off somewhere watching myself	O	O	O	O	O

Current Training Activities

How many professional and personal development workshops or management programs have you attended in the past year?

O None
O 1
O 2
O 3

O 4
O 5
O 6 or more

Current Training Activities

Overall, how would you rate the quality of training activities you have attended in the past year or so?	O Excellent O Good O Fair O Poor O N/A
Overall, how satisfied are you with the training activities you have attended in the past year or so?	O Very Satisfied O Somewhat Satisfied O Somewhat Dissatisfied O Very Dissatisfied O N/A
Are you currently taking courses at a college or university in order to obtain a degree?	O Yes O No
Are you currently taking courses at a college or university not related to obtaining a degree?	O Yes O No
Give your best estimate of the number of hours you tend to spend participating in training and development activities each year.	O 0 O 33-40 O 1-8 O 41-48 O 9-16 O 49-56 O 17-24 O 57-64 O 25-32

Demographics

Sex:	O Male O Female
Education:	O High school or less O Some college - no degree O BA, BS, or equivalent O MA, MS, MBA, or equivalent O PHD, Doctorate, or equivalent
Age:	O Below 25 O 25 to 34 O 35 to 44 O 45 to 54 O 55 to 64 O 65 or older
How long have you worked with your current employer?	O Less than 1 year O 1-3 years O 4-8 years O 9-13 years O 14-17 years O 18 or more years
How long have you been in your current position?	O Less than 1 year O 1-2 years O 3-6 years O 7-10 years O more than 10 years
How likely is it that you will receive future job assignments that will involve a greater level of responsibility than in your current position?	O Very Unlikely O Somewhat Unlikely O Somewhat Likely O Very Likely

THANK YOU very sincerely for taking the time to complete this survey and helping out in this research study.

Should you be interested in any more information, please do not hesitate to email me at mariam@shebaya.com

Time 1 Student Questionnaire

Learning and Development
Questionnaire Form

Welcome!

Dear Student,

Thank you for agreeing to participate in this project!

This survey consists of several parts, with questions pertaining to different areas such as personality, values, general competencies, regulatory processes, and training activities...

Please take the time to read instructions and items carefully, and respond by rating each on the spectrum provided. Please follow instructions closely. You may also choose to leave some questions unanswered (N/A) if you believe they do not apply.

The survey should take around 25 minutes to complete. Your responses will remain completely confidential. Although you are asked for your name, this is only for the sake of linking your response at the beginning and end of the course. Please do provide your name otherwise data cannot be linked together, but rest assured that your privacy and anonymity will be very carefully safeguarded in compliance with the UK 1998 Data Protection Act.

If you would like to know more about this project, or if you have any questions, please do not hesitate to email me at mariam@shebaya.com.

Thank you very much for your assistance and participation in this project.

Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organizational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Name: _____

Email _____

University _____

Instructions

On the following page, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Mini-IPIP

	Very Inaccurate	Moderately Inaccurate	Neither Inaccurate nor Accurate	Moderately Accurate	Very Accurate
Am the life of the party.	O	O	O	O	O
Sympathize with others' feelings.	O	O	O	O	O
Get chores done right away.	O	O	O	O	O
Have frequent mood swings.	O	O	O	O	O
Have a vivid imagination.	O	O	O	O	O
Don't talk a lot.	O	O	O	O	O
Am not interested in other people's problems.	O	O	O	O	O
Often forget to put things back in their proper place.	O	O	O	O	O
Am relaxed most of the time.	O	O	O	O	O
Am not interested in abstract ideas.	O	O	O	O	O
Talk to a lot of different people at parties.	O	O	O	O	O
Feel others' emotions.	O	O	O	O	O
Like order.	O	O	O	O	O
Get upset easily.	O	O	O	O	O
Have difficulty understanding abstract ideas.	O	O	O	O	O
Keep in the background.	O	O	O	O	O
Am not really interested in others.	O	O	O	O	O
Make a mess of things.	O	O	O	O	O

Note: the student questionnaire is the same as the Executive Questionnaire except for more student-friendly wording in the Competencies (LCP) section.

Instructions LQ-S

Please indicate the degree to which you engage in the behaviors described below. Be as honest as you can and describe yourself as you see yourself now and not as you would like to be. If not applicable please choose n/a.

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I consistently meet or exceed performance targets, set clear performance goals, and concentrate on key priorities.	O	O	O	O	O	O
I am willing to compromise, accept criticism openly and non-defensively, and adapt my approach to situation and individuals.	O	O	O	O	O	O
I constantly seek more responsibility, am energetic, enthusiastic, highly motivated to advance, and take initiative.	O	O	O	O	O	O
I am good at judging others' strengths and weaknesses, use challenging assignments to promote development, promote feedback, and am genuinely interested in individual achievement.	O	O	O	O	O	O
I maintain a cooperative atmosphere in my group/team, find common ground, and know when conflict is healthy.	O	O	O	O	O	O
I understand how to make money in business, and how the negotiation process works with customers for win-win solutions.	O	O	O	O	O	O
I am a good public speaker, listen attentively, adapt style to suit audience, and write clearly and effectively.	O	O	O	O	O	O
If I am responsible for a team, I set challenging, meaningful goals for the team, communicate them, monitor progress, give feedback, and reward achievement.	O	O	O	O	O	O
I do not allow personal bias to influence decisions, work well with others, and promote diversity.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I generate new ideas, promote and handle needed change, involve others, promote experimentation with new ideas, and help others adjust to change.	O	O	O	O	O	O
I have confidence in others, am trusted, consider ethics of decisions, maintain confidentiality, accept responsibility for mistakes, and am consistent.	O	O	O	O	O	O
When in roles of responsibility I give direct and timely feedback on performance and ensure my team has the information it needs to do the job, and communicate others' opinion of the team.	O	O	O	O	O	O
I thoroughly understand leadership concepts, am highly competent in the technical and functional aspects of the latter, and stay informed about new practices and developments.	O	O	O	O	O	O
I command respect and attention, link team goals to mission, articulate a common vision/purpose; develop a sense of loyalty within the team, place priority on getting results, am comfortable in a position of authority, and am a good role model.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I reward people for performance, give credit and praise for good work, inspire people to excel, and communicate confidence in my team.	O	O	O	O	O	O
I delegate effectively, to the lowest level appropriate, and encourage participation in decisions.	O	O	O	O	O	O
I persist in the face of obstacles and setbacks, complete projects, am willing to take a stand, and push hard when appropriate.	O	O	O	O	O	O
I am well organized, develop contingency plans, effectively plan and prioritise tasks, coordinate work with others, use resources effectively, and manage multiple projects.	O	O	O	O	O	O
I am approachable, tolerant of differences, and have good working relationships with team, peers, and managers.	O	O	O	O	O	O

Competencies

	Strongly Disagree	Disagree	Uncertain or Unsure	Agree	Strongly Agree	N/A
I involve the right people in decisions; have a good network of contacts, astute sense of policies, am effective at influencing decision makers, and negotiate persuasively.	O	O	O	O	O	O
I consider consequences, alternatives and different perspectives, confront problems promptly, am willing to make decisions when outcome is uncertain, and do not get sidetracked by irrelevancies.	O	O	O	O	O	O
I value and acknowledge the contribution of each team member, promote cooperation, avoid team rivalries, and ensure sufficient resources.	O	O	O	O	O	O
I understand my own strengths/weaknesses, learn from success and failure, seek feedback on performance and adapt behaviour in response, and pursue learning and self-development.	O	O	O	O	O	O
If in a leadership role, I clarify everyone's roles and responsibilities, ensure understanding of team goals, set clear expectations of performance, and explain how performance will be evaluated.	O	O	O	O	O	O
I am good at recruiting talented people for the job/task at hand, understand skills required in team, and take appropriate action with consistently poor performance.	O	O	O	O	O	O
I communicate a long term vision with short term performance goals, understand different group dynamics, effectively manage complex change, and seek new opportunities.	O	O	O	O	O	O
I maintain composure under stress, work effectively in ambiguous situations, and remain optimistic.	O	O	O	O	O	O
I maintain time effectively, do not over-commit, rarely miss deadlines, and do not get sidetracked.	O	O	O	O	O	O

| Are you currently taking a leadership course at university? | O Yes |
| | O No |

Have you had any Leadership training in the past? If yes, please describe briefly in what context (work, seminar...) and for how long, as well as how it impacted your thinking/behavior.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Demographics

Sex:	O Male	
	O Female	
Education:	O current BA, BS, or equivalent	
	O current MA, MS, MBA, or equivalent	
Age:	O Below 25	
	O 25 to 34	
	O 35 to 44	
	O 45 to 54	
	O 55 to 64	
	O 65 or older	
Have you had work experience? If yes, How long?	O No work experience	O 4-8 years
	O Less than 1 year	O 9-15 years
	O 1-3 years	
What is your current position?	_____	

THANK YOU very sincerely for taking the time to complete this survey and helping out in this research study.

Should you be interested in any more information, please do not hesitate to email me at mariam@shebaya.com

Time 2 Questionnaires

Time 2 questionnaires consisted of part of Time 1 questionnaires (SSRQ, MTQ, RSMS, Priv-PSC, LCP, and an additional demographic question).

Time2 Development Students
Questionnaire Form

Welcome!

Dear Student,

Thank you for agreeing to participate in the second and final part of this project.

This survey is similar to the first but shorter and should take you around 15 minutes to complete.

Please take the time to read instructions and items carefully, and respond by rating each on the spectrum provided. Please follow instructions closely. You may also choose to leave some questions unanswered (N/A) if you believe they do not apply.

Your responses will remain completely confidential. Although you are asked for your name, this is only for the sake of linking your response at the beginning and end of the course. Please do provide your name otherwise data cannot be linked together, but rest assured that your privacy and anonymity will be very carefully safeguarded in compliance with the UK 1998 Data Protection Act.

Again, if you would like to know more about this project, or if you have any questions, please do not hesitate to email me at mariam@shebaya.com.

Thank you very much for your assistance and participation in this project, which has been crucial for the progress of my PhD.

Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organizational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Name:	_____
Email	_____
University	_____
Have you just completed a leadership course at university?	O Yes O No

[...]

Time2 ExecEd Aston
Questionnaire Form

Welcome!

Dear Participant,

Thank you for agreeing to participate in the second and final part of this project.

This survey is similar to the first but shorter and should take you around 15 minutes to complete.

Please take the time to read instructions and items carefully, and respond by rating each on the spectrum provided. Please follow instructions closely. You may also choose to leave some questions unanswered (N/A) if you believe they do not apply.

Your responses will remain completely confidential. Although you are asked for your name, this is only for the sake of linking your response at the beginning and end of the course. PLEASE DO PROVIDE YOUR NAME otherwise data cannot be linked together, but rest assured that your privacy and anonymity will be very carefully safeguarded in compliance with the UK 1998 Data Protection Act.

Again, if you would like to know more about this project, or if you have any questions, please do not hesitate to email me at mariam@shebaya.com.

Thank you very much for your assistance and participation in this project, which has been crucial for the progress of my PhD.

Regards,

Mariam Shebaya
Doctoral Researcher
Work and Organizational Psychology
Aston Business School
Aston Triangle
Birmingham B4 7ET
UK

Name: _____

Email _____

University _____

Have you just completed a Development   O Yes
Program with Aston University?   O No

[...]

Demographics

Have you changed your job SINCE   O Yes   O No
TAKING THE FIRST SURVEY?
If yes, What is your current job/position? _____

THANK YOU very much for taking the time to complete this survey and helping out in this research study.

Should you be interested in any more information, please do not hesitate to email me at mariam@shebaya.com

Appendix 7 – Pilot study CFA Figures

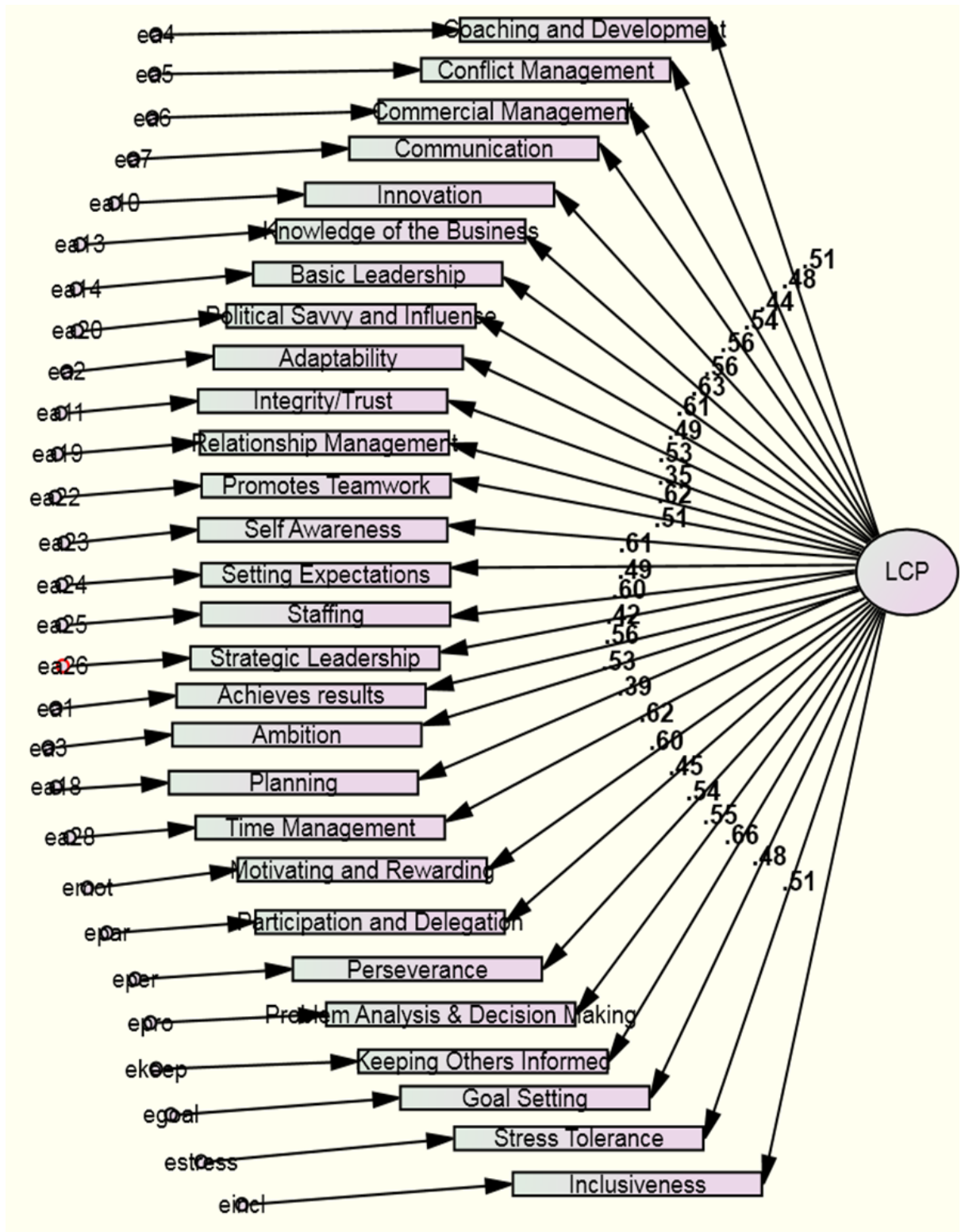**Figure 12 - LCP One-Factor Model (with standardized estimates).**

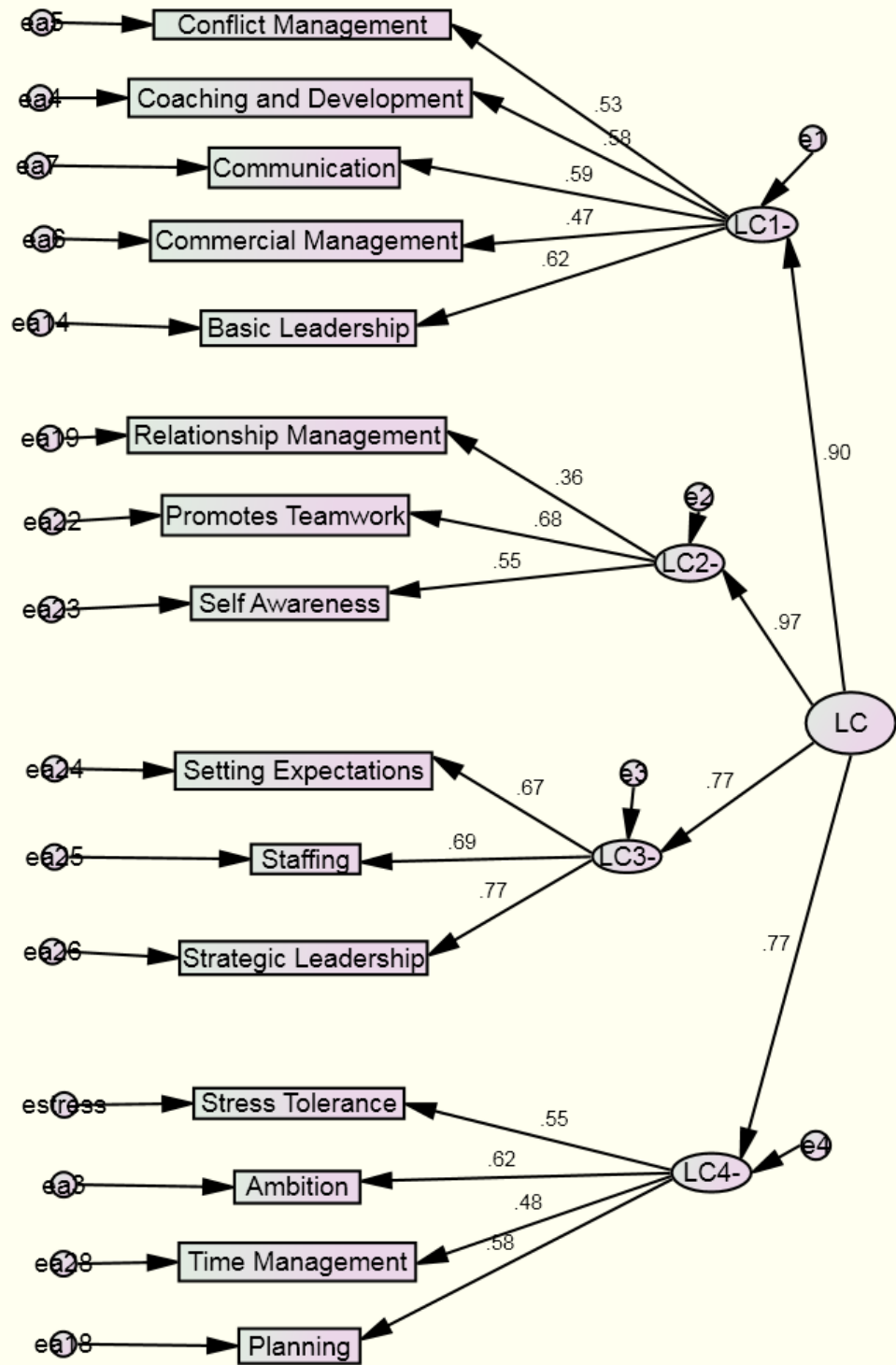**Figure 13 - LCP Four-Factor Model (with standardized estimates).**

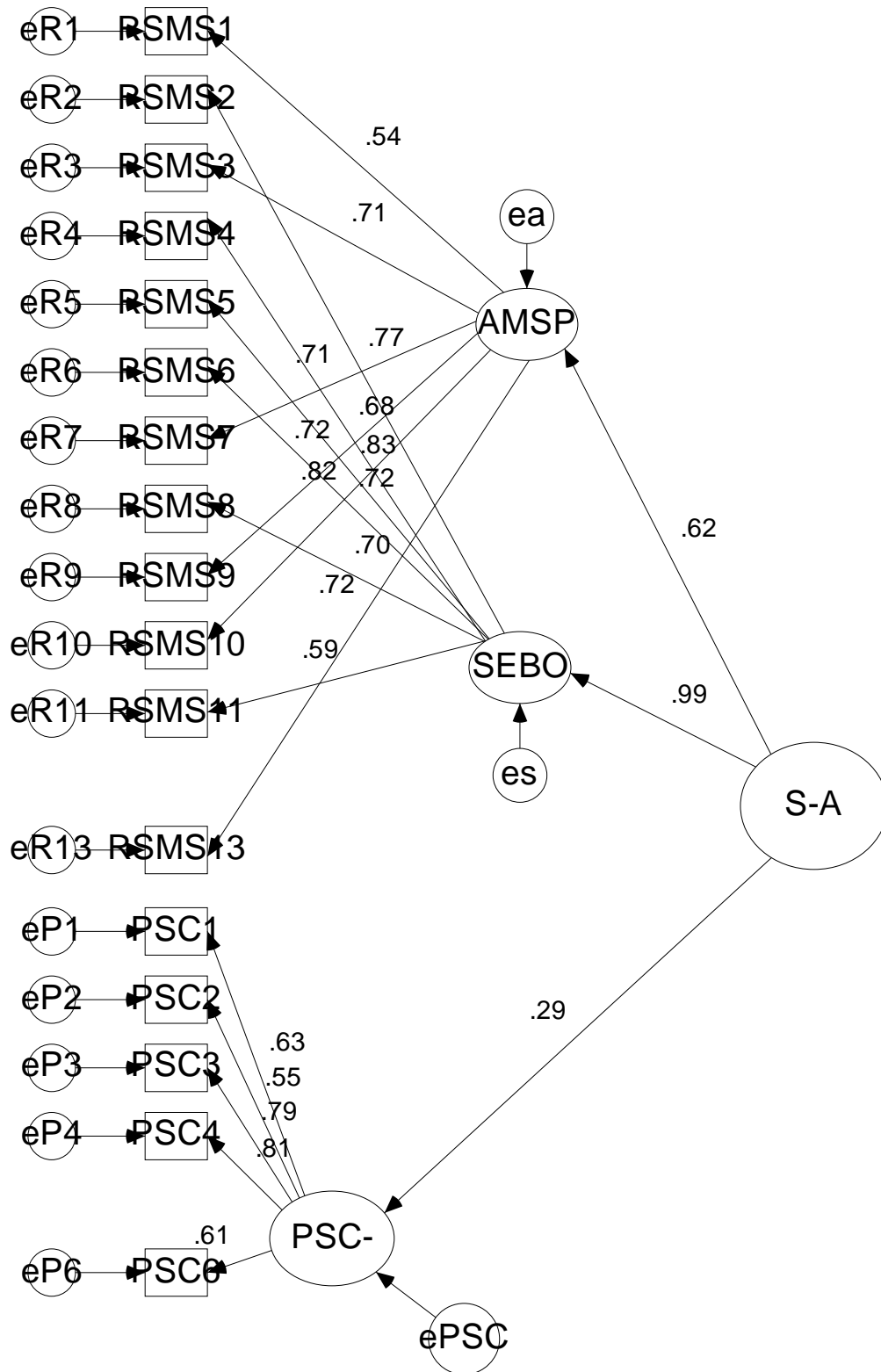**Figure 14 - Self-Awareness Scale Structure.**

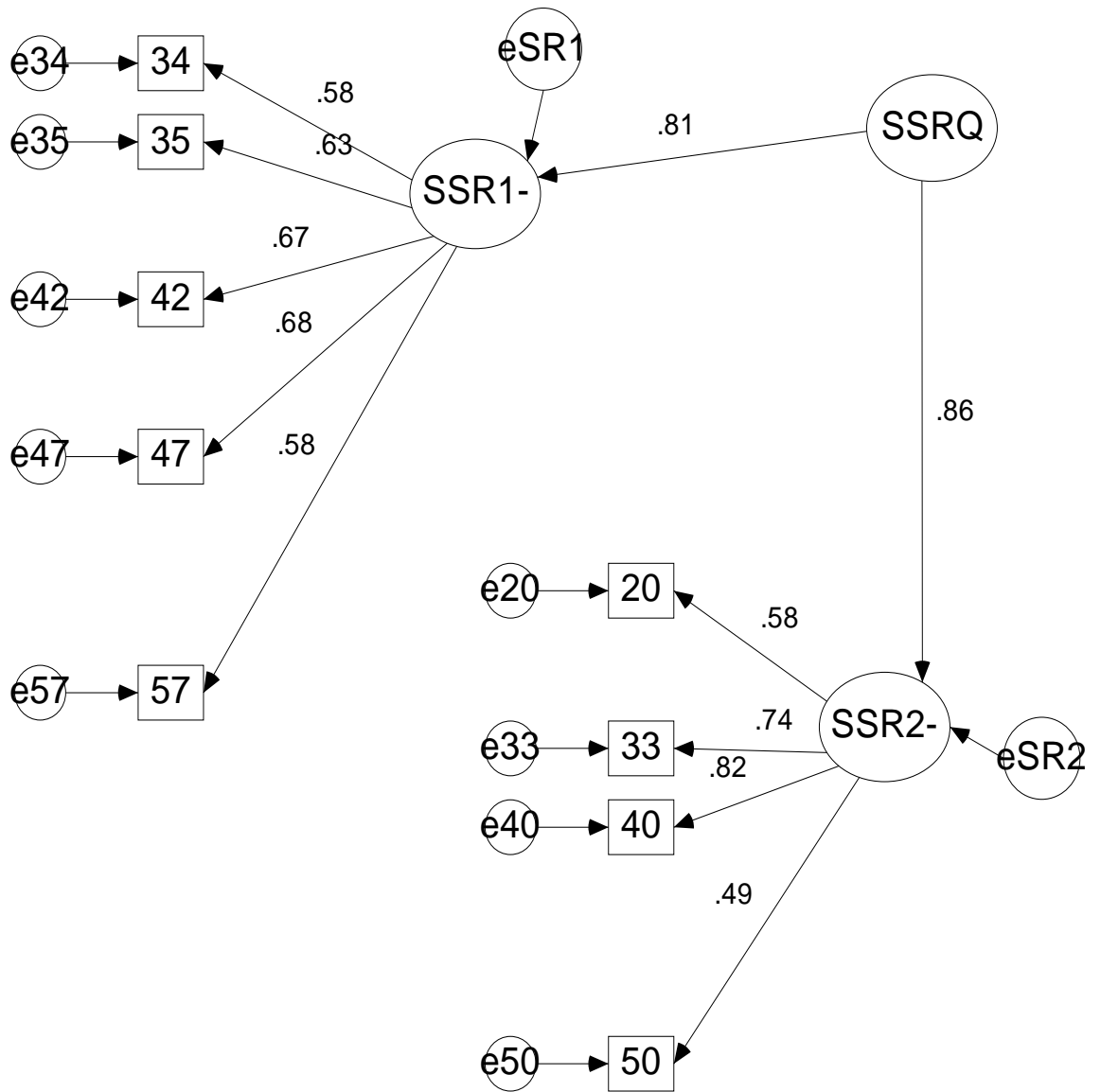**Figure 15 - Self-Regulation Scale Structure 2 factors.**

Figure 16 - Self-Regulation Scale Structure 1 factor.
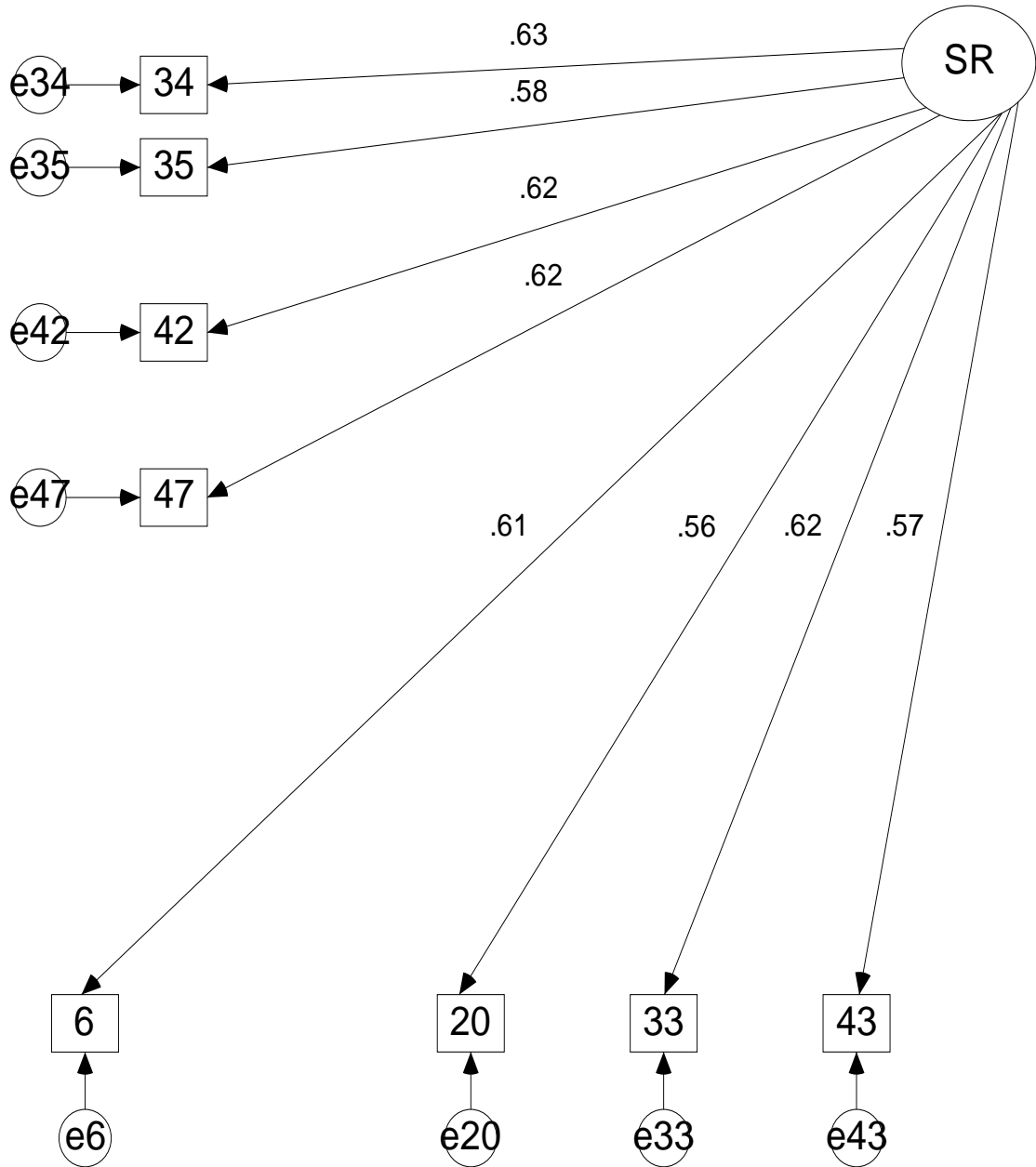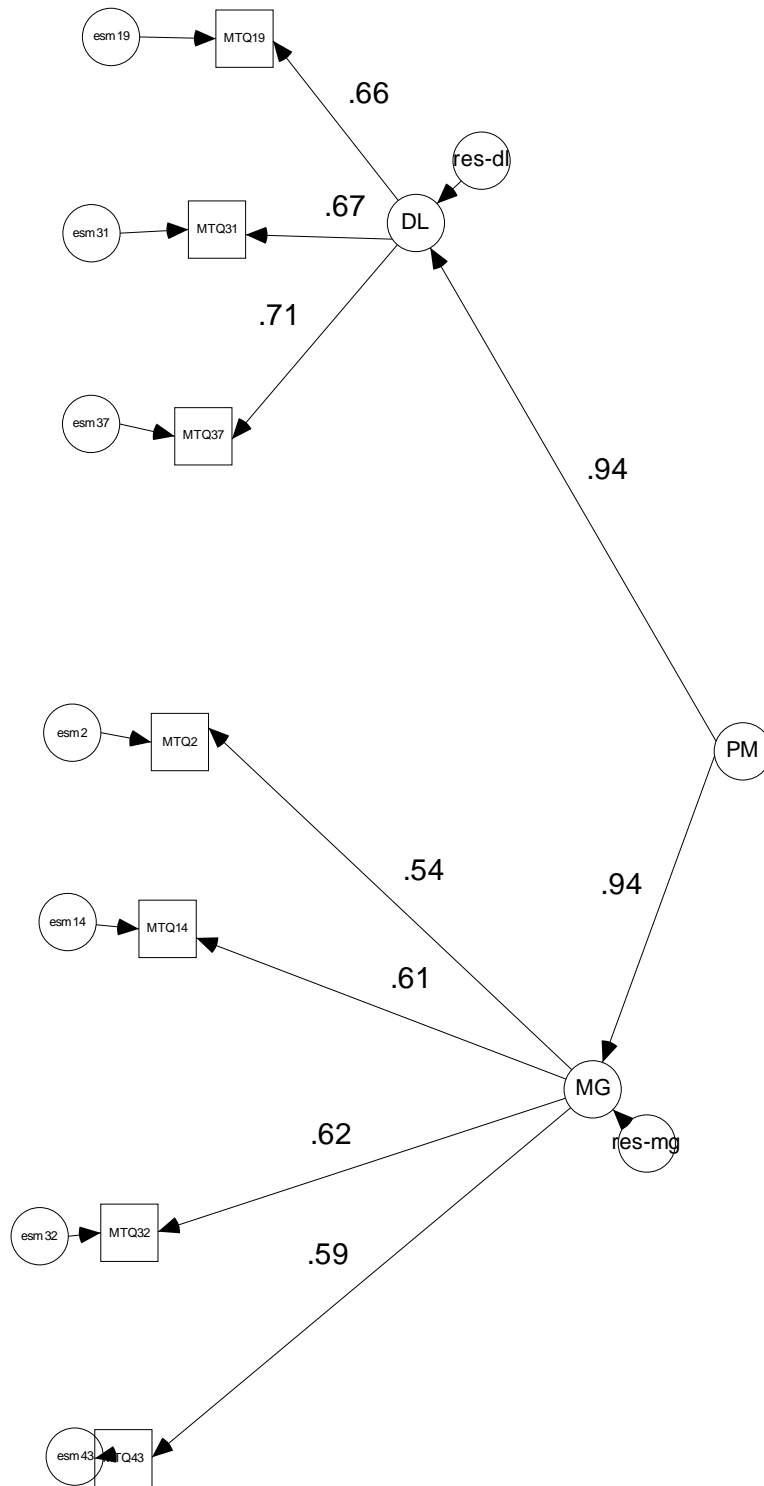
Figure 17 - Self-Motivation Scale Structure 2 factors.
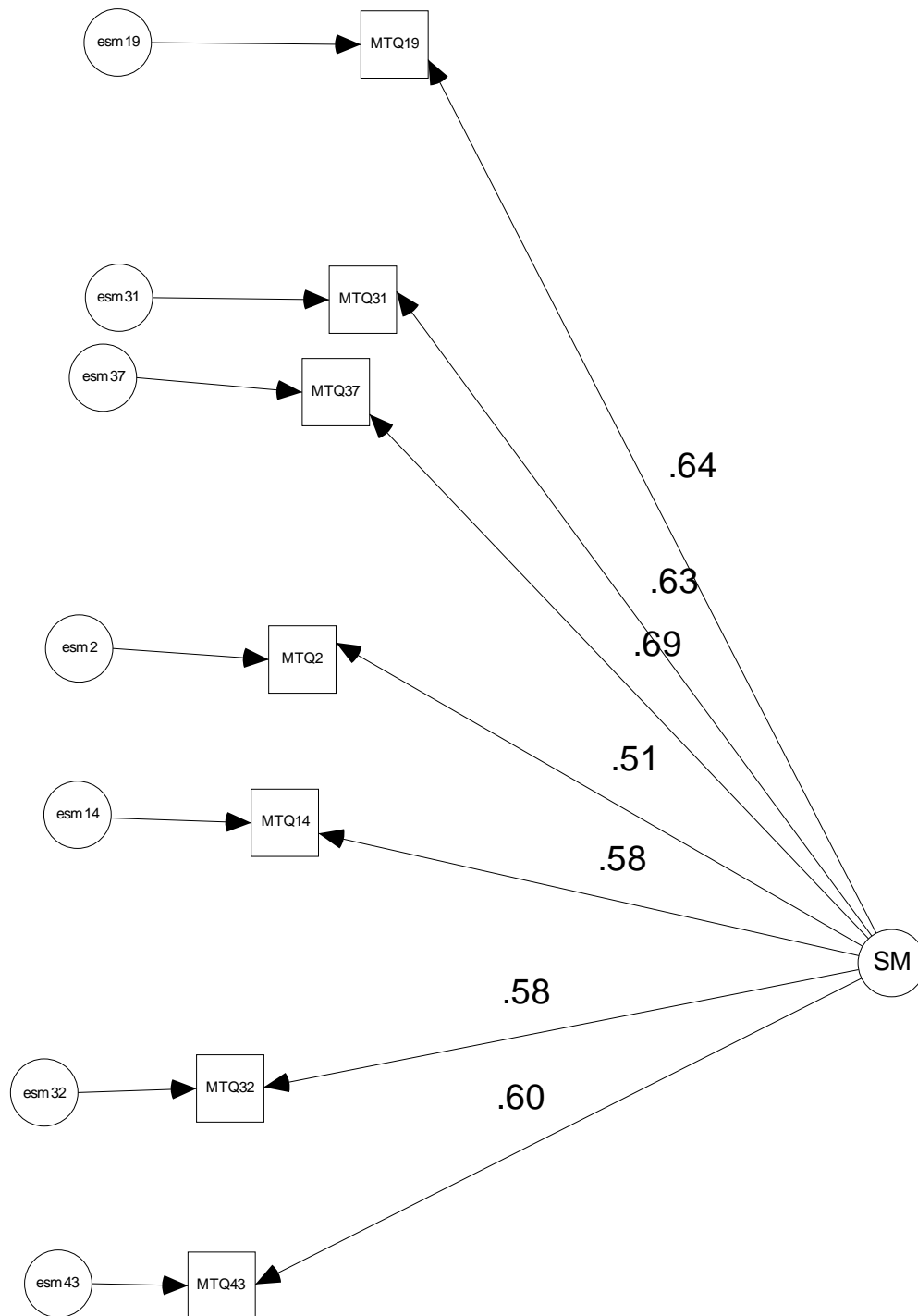
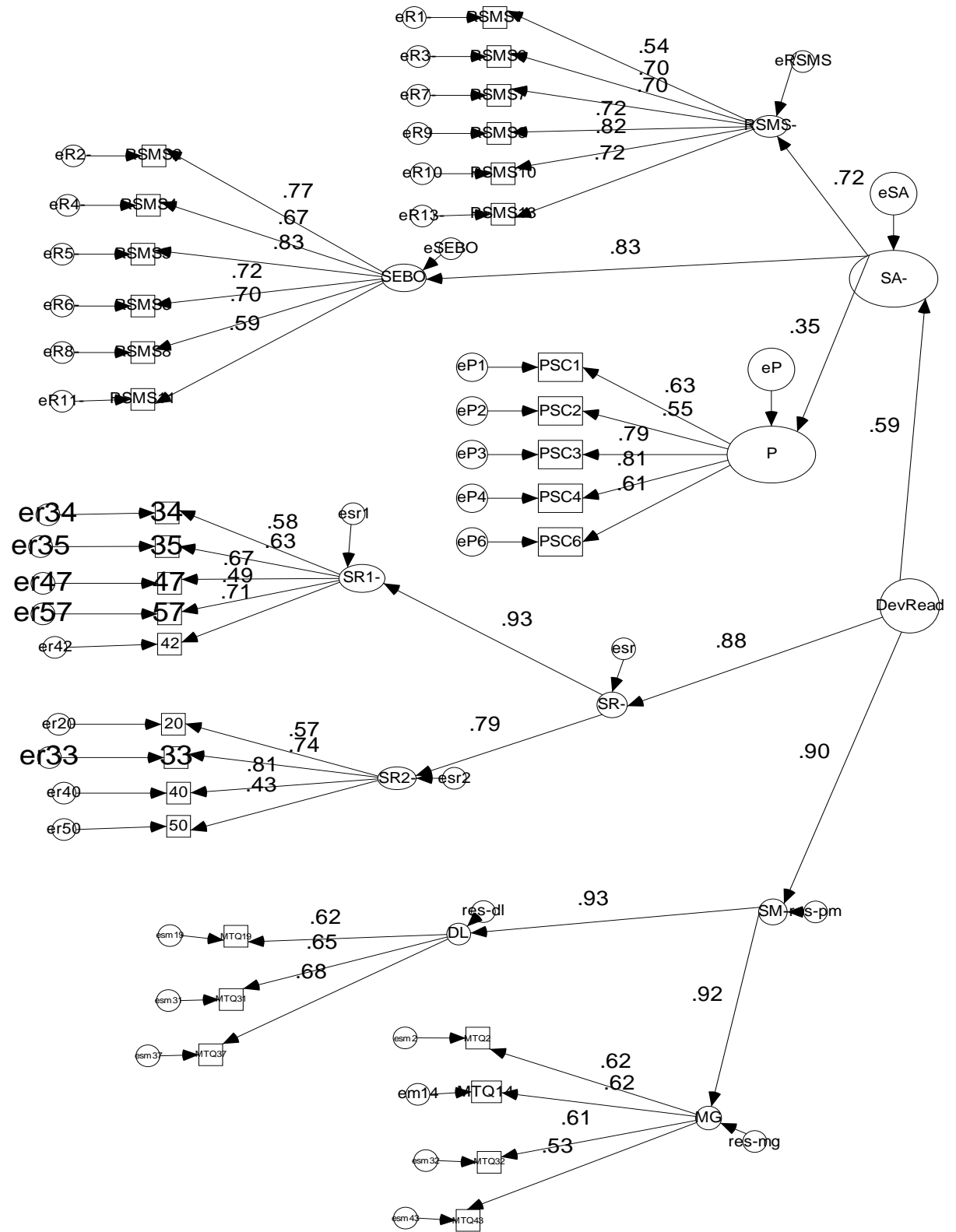**Figure 18 - Self-Motivation Scale Structure 1 factor.**
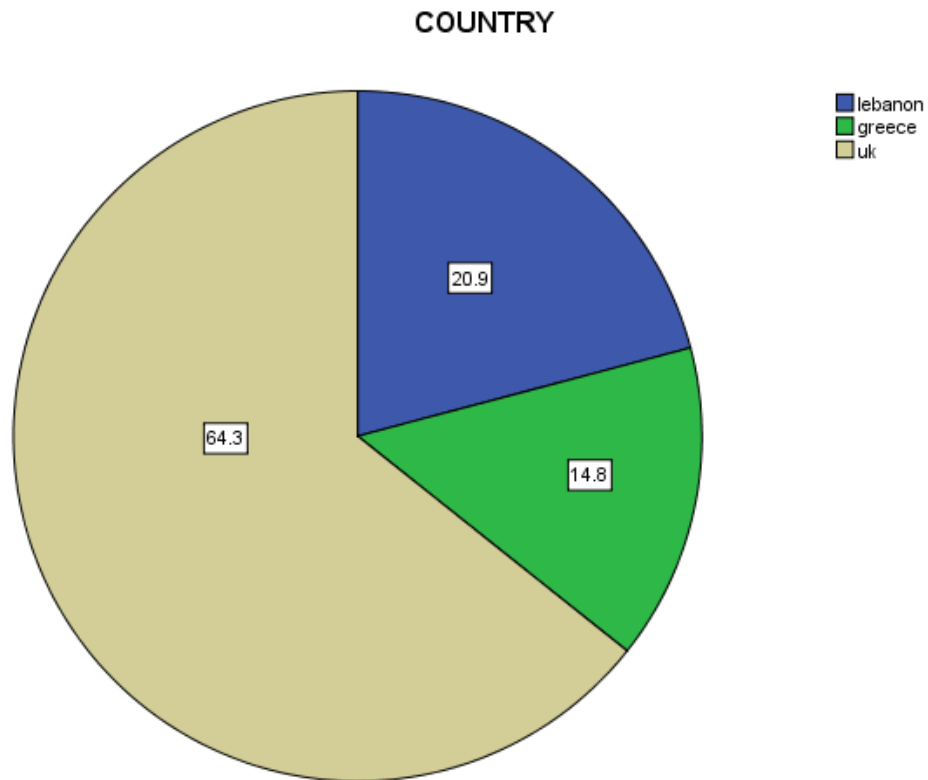
Figure 19 - Final Developmental Readiness Scale Structure.

Appendix 8 – Sample Statistics

Figure 20 - Sample composition by Country, Sample, Age, Education, and Tenure.

COUNTRY

Sample

Legend:
- Stu LD
- Stu Ctrl
- Exec LD
- Exec Ctrl

9.1

38.7

35

17.2

Tenure

Legend:
- .00
- No work experience
- Less than 1 year
- 1-3 years
- 4-8 years
- 9-15 years
- 6.00

6.1

1.3

5.7

22.6

22.6

40.1
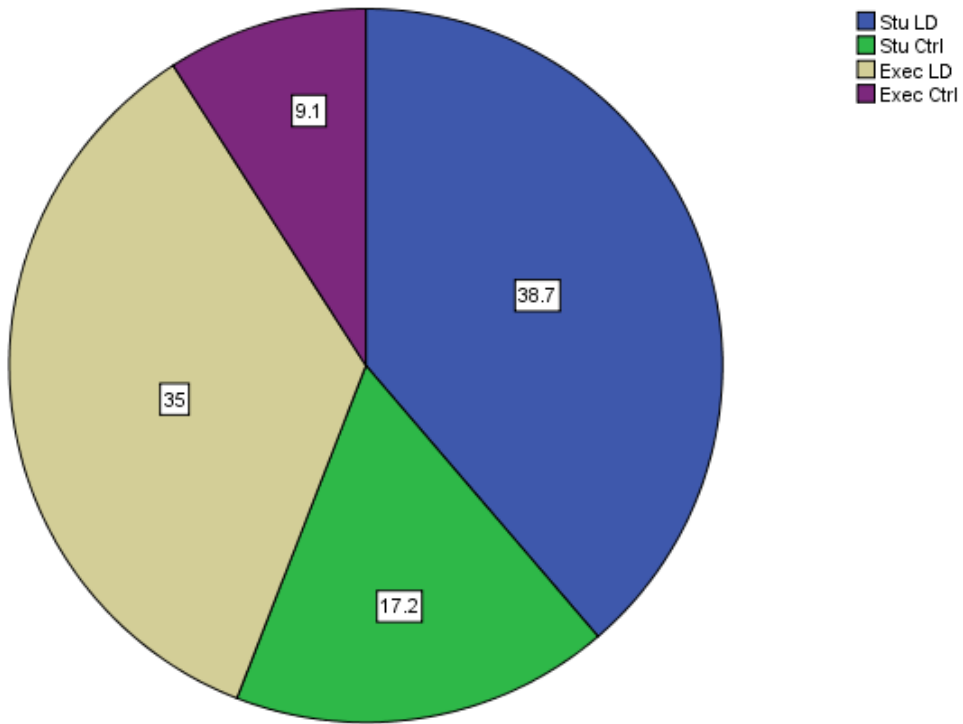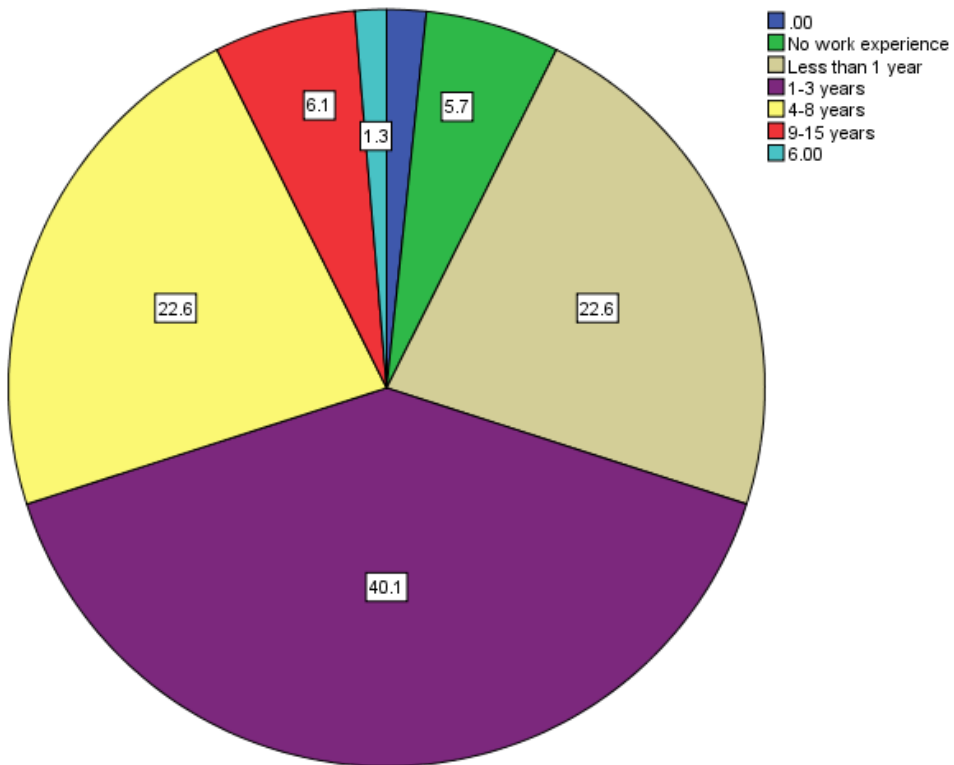
Appendix 9 – Final Developmental Readiness Items

The final DR scale consisted of the following 33 items:

Self-Motivation

MTQ 31   I prefer activities that provide me the opportunity to learn something new.

MTQ 37   I am naturally motivated to learn.

MTQ 2   I set goals as a way to improve my performance.

MTQ 32   I work hard at everything I undertake until I am satisfied with the result.

MTQ 43   My personal standards often exceed those required for the successful completion of a project.

MTQ 19   I like to take classes that challenge me.

MTQ 14   When learning something new, I focus on improving my performance.

Self-Awareness

PSC 1   I'm always trying to figure myself out

PSC 2   I'm generally attentive to my inner feelings

PSC 3   I reflect about myself a lot

PSC 4   I'm constantly examining my motives

PSC 6   I tend to scrutinize myself

RSMS 1   In social situations, I have the ability to alter my behavior if I feel that something else is called for

RSMS 2   I am often able to read people's true emotions correctly through their eyes

RSMS 3   I have the ability to control the way I come across to people, depending on the impression I wish to give

RSMS 4   In conversations, I am sensitive to even the slightest change in the facial expression of the person I'm conversing with

RSMS 5   My powers of intuition are quite good when it comes to understanding others' emotions and motives

RSMS 6   I can usually tell when others consider a joke to be in bad taste, even though they may laugh convincingly

RSMS 7   When I feel that the image I am portraying isn't working, I can readily change it to something that does

RSMS 8   I can usually tell when I've said something inappropriate by reading it in the listener's eyes

RSMS 9   I have trouble changing my behavior to meet the requirements of any situation I find myself in

RSMS 10   I have found that I can adjust my behavior to meet the requirements of any situation I find myself in

RSMS 11   - If someone is lying to me, I usually know it at once from that person's manner of expression

RSMS 13   Once I know what the situation calls for, it's easy for me to regulate my actions accordingly.

Self-Regulation

SR 20   I have trouble following through with things once I've made up my mind to do something.

SR 33   I have a hard time setting goals for myself.

SR 40   I have trouble making plans to help me reach my goals.

SR 50   Often I don't notice what I'm doing until someone calls it to my attention.

SR 34   I have a lot of willpower.

SR 35   When I'm trying to change something, I pay a lot of attention to how I'm doing.

SR 47   Once I have a goal, I can usually plan how to reach it

SR 57   I learn from my mistakes.

SR 42   I set goals for myself and keep track of my progress.

Appendix 10 – Results of Regression Analyses for all Dependent Variables

Table 58 - Results of regression analyses for all DVs for comparison.

IV		DR	SA	SR	SM
E		.088	-.011	.153**	.049
A		.343***	.405***	.183**	.240***
C		.251***	.058	.305***	.198***
N		-.075	.139**	-.189***	-.089
O		.188***	.188***	.073	.187***
	R^2	.297	.363	.212	.177
	ΔR^2	.274***	.258***	.209***	.165***
CO		-.188***	-.101	-.137*	-.194***
ST		-.024	.035	-.055	-.027
	R^2	.054	.149***	.022	.050
	ΔR^2	.033**	.011	.019	.035**
OC		.077	.017	.048	.108
SE		.105	.046	.102	.091
	R^2	.036*	.104***	.015	.033*
	ΔR^2	.016	.002	.012	.019
COST		-.147*	-.047	-.131*	-.153**
	R^2	.044	.107***	.023	.039
	ΔR^2	.021*	.002	.016*	.022**
OCSE		.131*	.046	.110	.138*
	R^2	.040	.107***	.018	.035
	ΔR^2	.016*	.002	.012	.018*

Standardised Betas are reported. N=297. *p < .05; ** p < .01; *** p < .001.